FEBRUARY 14, 1959
VOL. 156 — NO. 7

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
SINCE 1901

COLOR adds new beauty To your home....
TEEN-AGERS
FREE
YOUR DREAM COME TRUE...
A COLOR PHONE OF YOUR OWN RIGHT IN YOUR OWN ROOM TOO!
BOYS & GIRLS 7TH THRU 12TH GRADES
REGISTER NOW !
PHONE OF YOUR OWN

Published every week on Saturday by TELEPHONY PUBLISHING CORP. 608 S. Dearborn St., Chicago 5, Ill. Subscription $4.50 per year. Entered as second class matter at the Post Office at Chicago, Ill., under the act of Mar. 3, 1879.

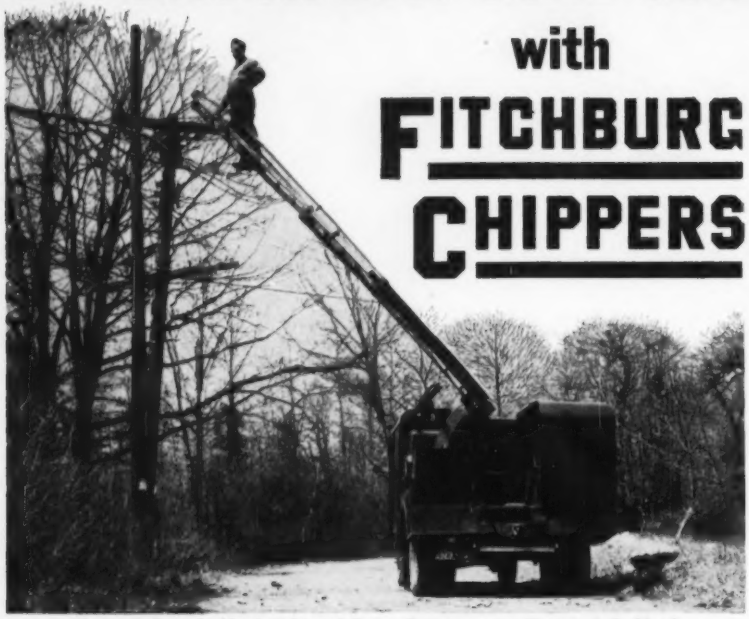
Guaranteed Circulation This Issue
13,049 of Which 12,449 Is Paid

"PHONE OF YOUR OWN"

Northern Ohio Telephone Co. display shown in Port Clinton store is part of contest featuring a free color extension to a lucky teen. Company and Nissen's Shoe Store co-sponsored novel promotion. See story on page 59.

MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING

Telephone and Power Companies
CUT BRUSH DISPOSAL COSTS 25 TO 50%
with FITCHBURG CHIPPERS



Crewmen from Rockland Light and Power Company, now Orange & Rockland Utilities, Nyack, N. Y. use special aerial ladders for pruning topmost branches.

BRUSH DISPOSAL METHOD No. 1
Rockland Light and Power Company crewman blows chips from FITCHBURG CHIPPER along roadway.

BRUSH DISPOSAL METHOD No. 2
Rockland Light and Power Company crewman blows chips from FITCHBURG CHIPPER into truck bin.

Some of the many Telephone and Power Companies using Fitchburg Chippers

Arizona Public Service
Phoenix, Arizona
Atlantic City Electric Company
Atlantic City, New Jersey
Central Hudson Gas and Electric Co.
Newburgh, New York
Consumers Power Co.
Jackson, Michigan
McDaniel Telephone Company
Salkum, Washington
Millington Telephone Co.
Millington, Tennessee
Mt. Vernon Telephone Corp.
Mt. Vernon, Ohio
Missouri Power & Light Co.
Hermann, Missouri
New Jersey Bell Telephone Co.
Vineland, New Jersey
Ohio Central Telephone Corp.
Patuskala, Ohio
Pacific Telephone and Telegraph
Northwest Area
Portland General Electric
Portland, Oregon
Public Service Co. of Oklahoma
Lawton, Oklahoma
Shawnigan Water and Power Co.
Quebec, Canada
Somerset Telephone Co.
North Anson, Maine
Southern California Edison Co.
Los Angeles, California
Valley Telephone Company
Silverton, Oregon
West Jersey Telephone Co.
Belvidere, New Jersey

A FITCHBURG CHIPPER will help get your brush disposal job done with *fewer men at less cost*—in any weather, wet or dry. No more loading, hauling, dumping, burning. Chips may be automatically loaded on truck or blown along right-of-way to keep down weeds.

SAFETY IN OPERATION: Exclusive Fitchburg spring-activated feed plate automatically adjusts as wood of different sizes is fed into the machine. This feature allows you to chip larger size wood without extra power. It reduces shock action, protects the operator in case foreign materials are accidentally fed during operation.

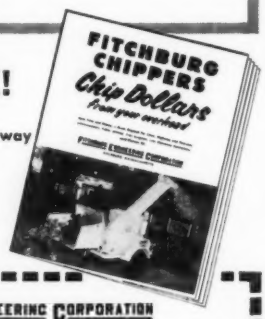
MINIMUM MAINTENANCE: No heavy fly wheel to cause clutch strain or bearing failure. Easily maintained by your own field personnel.

ONE YEAR GUARANTEE: Only Fitchburg Chippers give you *all* these features, backed by the experience and engineering skill of the world's pioneer manufacturer of wood chipping equipment. For a facsimile of the exclusive Fitchburg guarantee and color brochure described at right, mail the coupon today.

FITCHBURG ENGINEERING CORPORATION FITCHBURG, MASS.

NEW! FREE!

Mail Coupon for Brochure. Shows cut-away drawings of Fitchburg Chippers in action, specifications, photographs.



FITCHBURG ENGINEERING CORPORATION
Fitchburg, Mass., Dept. T-29
Send Free Copy of "Chip Dollars from Your Overhead."

Name .....
Position .....
Company .....
City or Town ..... State .....

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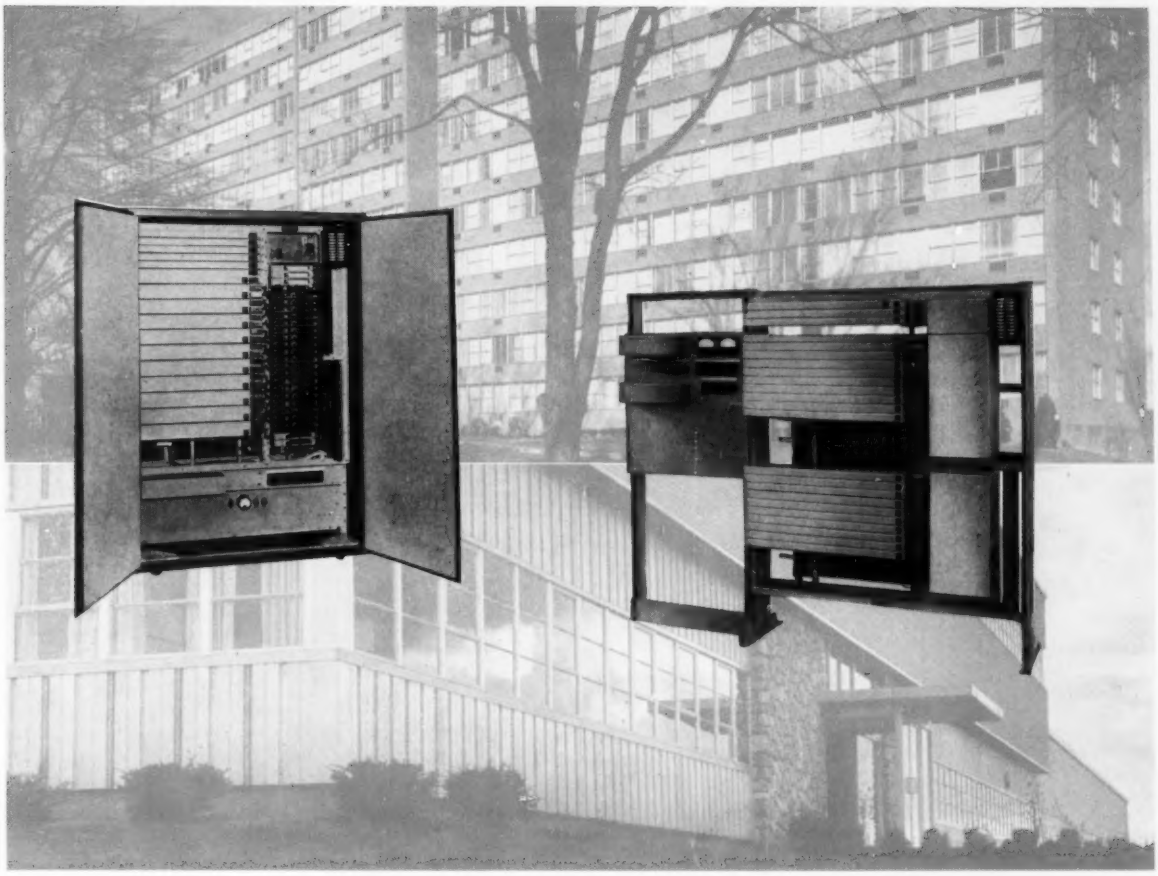
FOR COMPACTNESS, FLEXIBILITY, VERSATILITY

Complete XY® Dial PBX's in space-saving packages: the **F-40,** with 40-line capacity . . . 8 combination trunks . . . 12 private conversations . . . 24-hour service; the **F-80,** with the same advantages but twice the capacity. Contact your Stromberg-Carlson representative.



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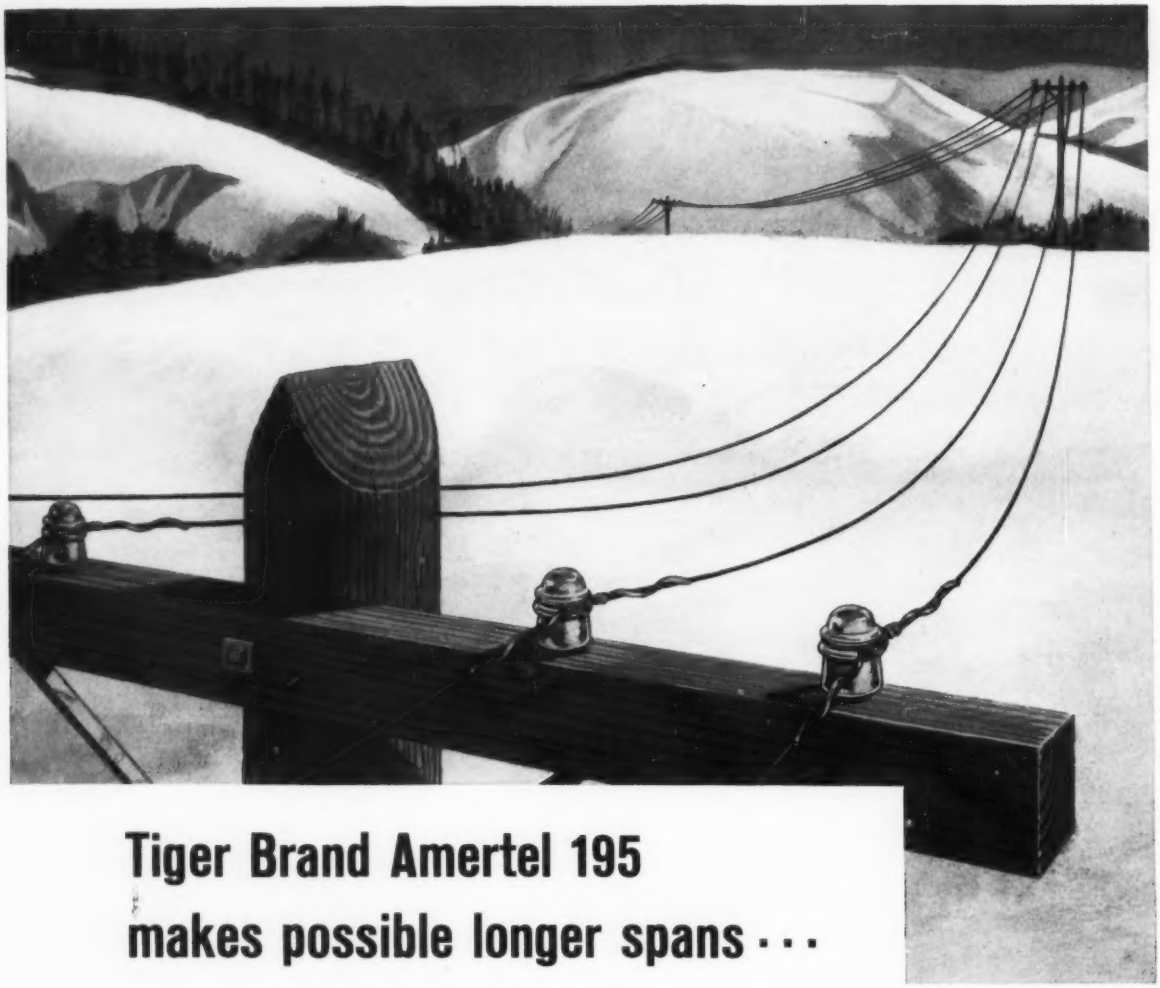
S-C | G-D



Tiger Brand Amertel 195 makes possible longer spans . . .

better rural telephone service—improved voice transmission efficiency

USS Amertel 195—thanks to improved physical and electrical properties—offers a voice transmission efficiency greater than other galvanized steel telephone wire. Amertel's lower resistivity at higher frequencies makes significant improvements in voice transmission quality.

With USS Amertel 195, rural telephone lines can now be strung with spans up to 700 feet in Light Loading areas; to 650 feet in Medium Loading areas; and to 600 feet in Heavy Loading areas. These longer spans result in reduced material and installation costs per mile of line, make it possible to expand rural telephone service faster and to extend service to remote areas where installation costs had previously been prohibitive.

The longer spans made possible with Amertel can easily bridge rivers and gullies. They can match the spans of rural power lines, eliminating the need for intermediate supporting poles. In areas where icing is a problem, the greater strength of USS Amertel permits the wire to stretch under ice load, yet return to its original stringing position after thawing.

More information available free! To find out more about USS Amertel 195—just write for a free copy of our booklet, Amertel 195. American Steel and Wire, 614 Superior Ave., N.W., Cleveland 13, Ohio. In it you'll also find complete information on USS Amerstrand Guy Wire.

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Customer-preferred...

FOR EFFICIENCY AND BIG CAPACITY

The Stromberg-Carlson No. 131 Switchboard provides fast, efficient handling of a large volume of commercial traffic . . . big capacity with provision for growth. Arranged for two positions, this board provides up to 100 lines, 12 trunks, 15 cord circuits in each position. Contact your Stromberg-Carlson representative.

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S-C GD

STUDEBAKER VEHICLES CAN SUBSTANTIALLY LOWER THE COST TO YOUR TELEPHONE COMPANY OF FLEET TRANSPORTATION

First things first. The first cost of Studebakers, both trucks and The Lark line, is below that of competition. All Studebaker vehicles have been engineered and constructed to produce an honest day's work *every day* on the job. Fuel consumption is low. Downtime is minimized because engines and running gear are rapidly accessible, sturdily built and simplified in design. And in the event of accident, The Lark's bolt-on fenders and grille cut the cost of sheet metal repairs. An important bonus feature is The Lark's space-saving capability. Each Lark requires 18 sq. ft. less parking space than conventional cars due to its 14½ ft. length. Multiply the value of this space saving by the number of vehicles in your fleet! Then add in the other savings: Lowest initial cost, less gas, minimum downtime, sound engineering for long service life. There's more to the story. Mail the coupon or contact your Studebaker dealer for the details.

STUDEBAKER VEHICLES HAVE BEEN SELECTED FOR USE BY:

Bell Telephone Company of New York
Illinois Bell Telephone Company
Indiana Bell Telephone Company
Mountain States Telephone and Telegraph
Western Electric

Without obligating myself, I would like to know more about the new dimension in fleet transportation.

MR. A. E. FITZPATRICK, Manager—Fleet Sales
STUDEBAKER-PACKARD CORP./South Bend 27, Indiana

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ADDRESS _____

CITY _____ ZONE _____ STATE _____

T-2-14-59

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FOR FINGER-TIP EFFICIENCY

The 6K-1 system by Stromberg-Carlson is a "finger-tip PBX" for small offices and for departmental use. Multi-line key telephone provides hold and transfer . . . dial selective intercom for up to 15 stations . . . "busy" lamp indication . . . intercom flashing . . . "executive right-of-way." Contact your Stromberg-Carlson representative.

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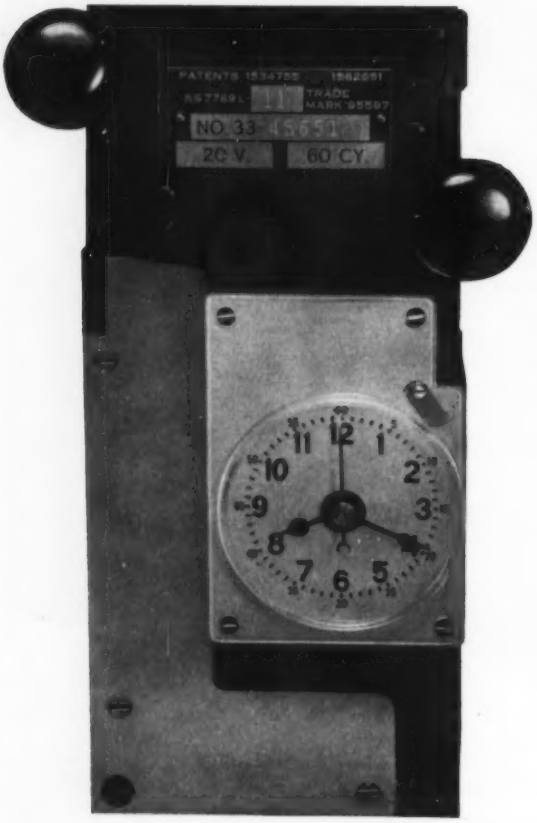
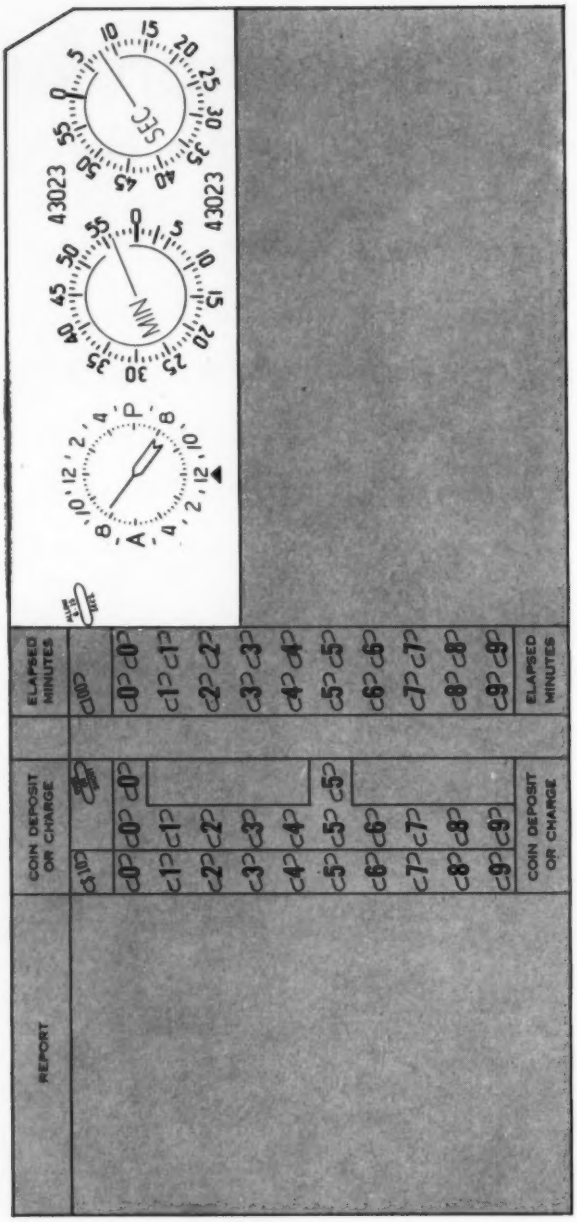
CALCULAGRAPH IS READY FOR MARK SENSING NOW!

If you are planning to use mark sense toll tickets now (or later) be sure your Calculagraphs are readily adaptable. Remember to do these three things now —

1. When ordering new Calculagraphs specify "set back" handles—this feature clears the way for mark sense toll tickets (or ANY SIZE ticket in fact).
2. Plan a program of modification of Calculagraphs now on your switchboard.
3. If you are still using the old round-type Calculagraphs, consider the economics of replacing them with the new space-saving Model 33 that will include all the latest improvements—set back handle, color-coded handles for easier operation and 60-minute dial to assure 100% accuracy on all calls.

If your analysis shows that mark sensing makes sense economically, or your present system requires a larger size ticket, consult your Calculagraph distributor today. Ask him about the set back handle feature as well as other modernization features of the NEW Calculagraph.





CALCULAGRAPH Company

312 Sussex Street · Harrison, New Jersey
Telephone: HUmboldt 2-0213

Manufacturers of Elapsed Time Recorders for over 65 years

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FOR EFFICIENCY AND DISTINCTIVE BEAUTY

Our No. 121 Cordless Switchboard lets secretary double as operator. Distinctive modern styling adds touch of beauty to any office. Our No. 120 cord-type board offers the same smart styling, with 80-line capacity.
Contact your Stromberg-Carlson representative.

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From Bell Telephone Laboratories...

Brainpower

for the brawny

Nike-Hercules

The Army's newest surface-to-air guided missile—the lethal Nike-Hercules—is now operational. Because it is, no unfriendly plane will be able to fly sufficiently high, fast or evasively to escape a fatal rendezvous with it.

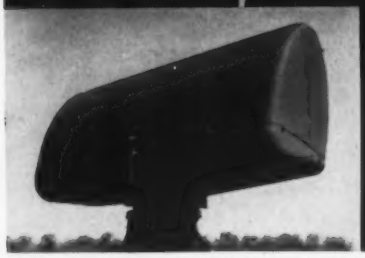
For Hercules has a "brain"—an intellect that makes it a prodigy among today's electronic robots. Bell Telephone Laboratories developed it. Western Electric (prime contractor for the entire missile system) is producing it. Douglas Aircraft Company is giving it its body.

This "brain" is a fully integrated guidance system, almost entirely land-based. Only the vital signal-receiving apparatus is expendable within the missile itself. Other highly practical features: it defies "jamming," is completely mobile, is designed in separate "building block" units which are replaceable in seconds—and is deadly accurate.

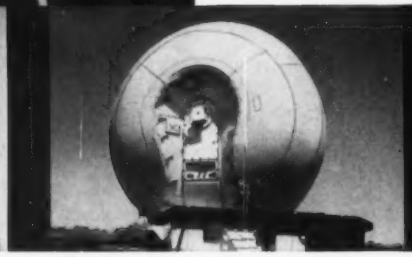
Bell Labs scientists and engineers designed the world's largest and most intricate telephone communications network for the Bell System. They developed about half of the Armed Forces' radar equipment during World War II. And they pioneered the nation's *first* successful air defense guided missile system—Nike-Ajax.

They were eminently qualified to give Hercules the brainpower it needed.

BELL TELEPHONE LABORATORIES
World center of communications research and development



Vigilant acquisition radar for Nike-Hercules first detects approach of distant aircraft, pinpoints its location and instantly signals to battery control.



Two tracking-radar antennas, housed in radomes, take over. One feeds target azimuth, elevation, range data to computers; other tracks Hercules.

Two sets of radar data are electronically computed and plotted. Hercules is "steered" by radio signals, then detonated at precise point of interception.

Customer-preferred...

FOR SIMPLICITY AND LOW COST

This two-line, 10-station PBX is ideal for budget-minded small-businessmen, profitable for you. The system provides positive, private, fully selective intercom between stations. Used with our two-line or three-line telephones.
Contact your Stromberg-Carlson representative.

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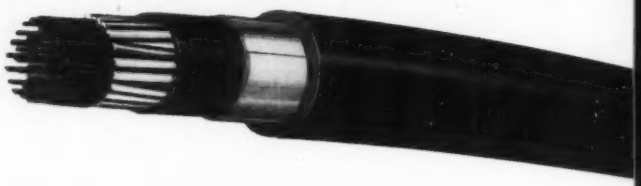
AERIAL AND DUCT TYPE



DIRECT BURIAL TYPE

PHELPS DODGE TELEPHONE WIRE
THE "MINE-TO-MARKET" QUALITY

Exchange Area Telephone Cable

This Phelps Dodge cable, designed for aerial, duct and direct burial use, has a lightweight, thermoplastic construction—including fully color coded conductors—that makes handling easier and cuts installation time.

Exceptionally fine electrical properties and superior resistance to moisture, weathering and abrasion are assured through the use of highest grade materials, skilled workmanship and manufacturing experience.

The controlled craftsmanship and high quality of Exchange Area Telephone Cable are typical of the entire line of Phelps Dodge telephone wires and cables including:

- Self-Supporting Telephone Cable
- Rural and Urban Distribution Telephone Wire
- Interior Telephone Cable
- Rubber-Insulated Lead-Sheathed Telephone Cable
- Paper-Insulated Lead-Sheathed Telephone Cable
- PD-Tel Wire

AND CABLE

LINE!

PHELPS DODGE COPPER PRODUCTS

CORPORATION

SALES OFFICES: Atlanta, Birmingham, Ala., Cambridge, Mass., Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Dayton, Denver, Detroit, Fort Wayne, Greensboro, N.C., Houston, Indianapolis, Jacksonville, Kansas City, Mo., Los Angeles, Memphis, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Rochester, N. Y., San Francisco, St. Louis, Seattle, Washington, D.C.

PD

FLASHES AND PLUGS

HELP'S HARD TO GET. Two Irishmen had passed away, one to heaven, and the other to Hades. Pat, in heaven, was lonesome for Mike. He telephoned Mike.

"Is that you, Mike?"

"It is."

"Are they keepin' you busy down there?"

"Not so much."

"What are you doing?"

"Shoveling coal two hours every day. Are you busy, Pat?"

"Indeed we are—working 20 hours a day scrubbing down the golden steps."

"Faith, why do you work such long hours?"

"We're short of help up here."

•

MUSIC CRITIC. Raymond Troyer, of LaGrange, Ind., considered his musical ability had been slurred when he saw the printed version of this classified ad he had telephoned to the LaGrange *Standard*: "For sale, trombone and boxer pups."

The ad came out reading: "For sale, trombone and box of plugs."

•

RIGHT IS RIGHT. The AP reported recently that a woman playgoer in Nashville, Tenn., would accept only absolute realism on the stage.

After a performance of "The Seven Year Itch," a play whose action is set in New York, she protested that an actor dialed the wrong number for long distance in that city.

The actor had dialed 211, instead of 110, she pointed out.

•

JUST A BUNDLE OF BLISS. The UPI reported recently an angry British father complained that the switchboard operator at a London hospital told him his baby was a boy when it was really a girl.

As a result, hospital authorities placed this sign over the switchboard:

"No sex must be given out over the phone."

•

WHEN IS A SURPRISE? Because Salt Lake City fathers kept the news of a surprise ceremony honoring a veteran policewoman on her retirement so guarded a secret that they forgot even to telephone an invitation to her, their guest did not come to the party!

Commissioners, newspapermen and cameramen—all were poised for arrival of the honoree. When she did not come, the embarassed hosts realized they had forgotten to telephone their invitation to her.

Red-faced, they put away the bouquet and the official proclamation, and invited her (by telephone) to the no longer "surprise" ceremony to be held a few days later.

CHANGE OF ADDRESS

Please notify your local postmaster and the Circulation Dept. of TELEPHONY of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

Since 1901

February 14, 1959

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VAC

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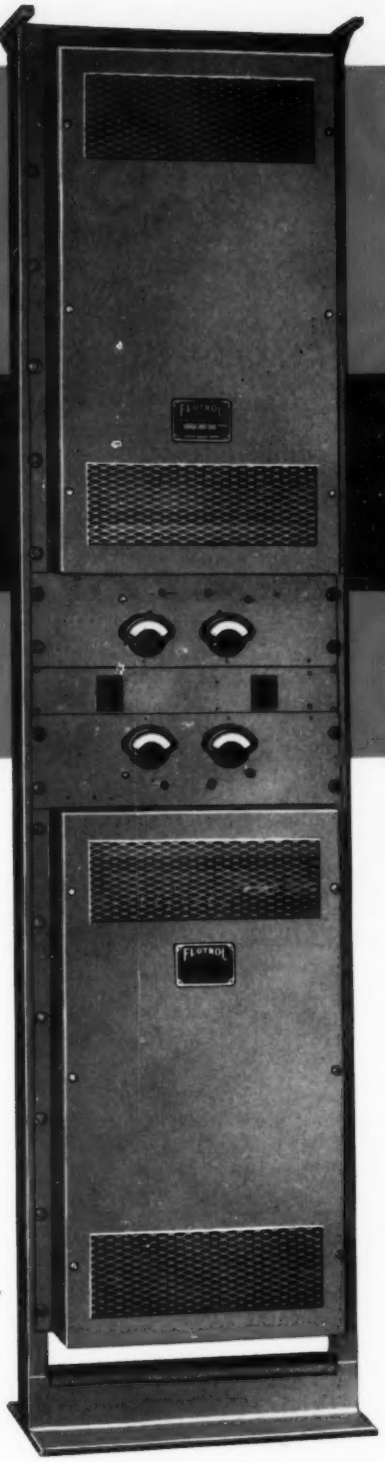


2 in the space of 1

LORAIN

DUAL

FLOTROL CHARGERS

TWO STANDARD FLOTROL CHARGERS TEAMED TOGETHER FOR THE UTMOST IN FLEXIBILITY, SAFETY, COMPACTNESS

You get standby peak capacity or additional operating capacity — without using additional costly floor space!

The Lorain Dual Flotrol Battery Charger Assembly consists of two complete Flotrols mounted one above the other in a standard 23″ relay rack. The upper unit is inverted to bring all meters and controls to eye level, along with easy-access input and output leads. Total floor space: 24-3/8″ x 15″.

The two chargers can be used either individually, or continuously in parallel. In addition, an automatic control panel (optional) allows either Flotrol to be selected as the primary charger with the second unit automatically operated in response to load demands exceeding the capacity of the primary charger.

Maintenance work or replacement of either unit leaves the other in service.

Automatic proportional sharing of the load when operating in parallel is available on most of the 14 models.

Single-phase Duals offer a range of outputs from 24 to 48 amps. (input 230 or 115 volts, 60 cycles). Three-phase Duals cover 50 to 100 amps. Capacity of a Dual unit of less than maximum rating can be increased at any future time by substituting a larger Flotrol for either unit.

Lorain Dual Flotrols are offered in many combinations of chargers, controls and accessories. You can buy complete assemblies or any part you require. Get the full story.

Write for Bulletin 174A

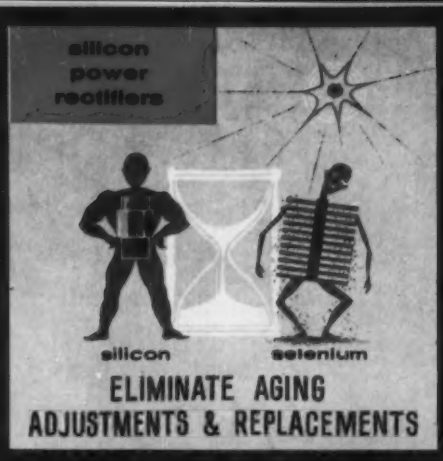
THE ONLY COMPLETE LINE OF POWER EQUIPMENT FOR COMMUNICATIONS

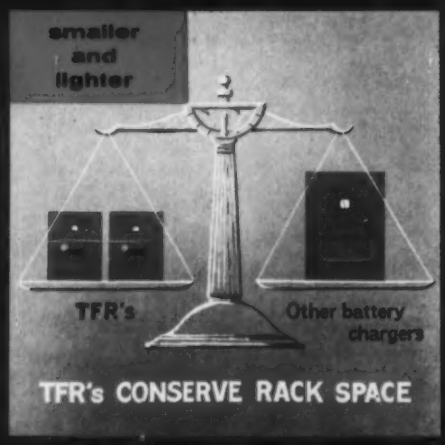
our equipment is sold through leading telephone distributors

FLOTROL SUN-CYCLE

LORAIN *Products Corporation*

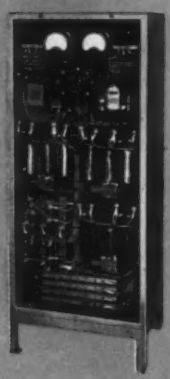
1122 F Street Lorain, Ohio Phone: ATlantic 8-9191





What you want most in battery chargers, you get in

WARREN TFR
TRANSISTOR FLOAT RECTIFIERS



Warren TFRs are automatic, full-float, silicon-type battery chargers. Through reliable power transistor control, they provide precise voltage regulation, superior efficiency. The best in battery chargers, these compact, field-proved Transistor Float Rectifiers are available from 3 to 400 amperes. Specify Warren TFRs and you get what you want *most* in battery chargers... dependable, maintenance-free, adjustment-free performance.

Warren 100 ampere TFR (shown with cover removed): 45½" high, 23" wide, 15" deep; 685 pounds net weight. Write today for complete information.

THE WARREN MFG. COMPANY, INC.
LITTLETON, MASSACHUSETTS

WARREN MANUFACTURING WM

IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

NRECA and NTCA meet in Washington. FCC hopes to speed up final decision on rates for private line and teleprinter services. FCC chairman sees trial of pay-TV by late 1959. Rock-and-roll enters propaganda scene in cold war with Reds.

ON FEB. 6 here in Washington, D. C., the National Telephone Cooperative Association (NTCA) held the opening meeting of its two-day annual convention. Actual attendance was difficult to estimate because the annual convention of the much larger and older parent organization —National Rural Electric Cooperative Association (NRECA)—was being held in the Nation's Capital at the same time. Since there was a good bit of visiting between the two groups as well as duplication of individual membership, it was pretty hard to say just how big the NTCA meeting would be if the NRECA were not around.

The first session got off a little late. The articulate general manager of NRECA, Clyde T. Ellis, finally showed up and was in his usual form in delivering the principal address to the NTCA's opening session. Both of these groups are supposed to be nonpartisan, but Brother Ellis made it pretty plain in almost every other sentence where his sympathy lies. He accused the Eisenhower administration of trying to sabotage and kill the rural telephone program. He said the NRECA and the NTCA were both engaged in a "Christian crusade" to bring electricity and telephone service to rural America.

Ellis pointed to the handicaps under which both the telephone and rural electric co-ops operate in dealing with rival commercial utility companies. He said that since the cooperatives were necessarily small, they were at a disadvantage in bargaining with the Bell System and other larger commercial companies on such matters as toll compensation. Ellis cited six handicaps under which both electric and telephone cooperatives operate. Ellis presumably would have these things corrected or adjusted, either by REA policy decision, or by legislation:

(1) Restrictions as to markets served. Co-ops are not allowed to serve villages or towns over 1,500.

(2) Co-ops are not allowed to serve anyone to whom service (from a commercial company or otherwise) is already available.

(3) Co-ops must serve all the unserved whether they pay their own way or not.

(4) Co-ops have a financial burden of repaying their loans which commercial companies do not have when they refinance their debt obligations indefinitely.

(5) Co-ops have extraordinary hazards because their rural construction is exposed to the elements.

(6) Co-ops may also be exposed to the "bias" of regulatory commissions.

Ellis urged that the NTCA try to have Congress set up separate funds for cooperatives and commercial companies. He suggested that NTCA members find ways to do things collectively and that the association offer more services to its members. Ellis declared that the association should defend REA and try to get "some policy changes." He seemed disappointed with the progress made to date in this respect, pointing to attempts by both organizations to get preference for cooperatives in the granting of telephone loans. He commented that there had been no measurable success with the REA, even working through a Senate committee.

He deplored the fact that REA makes more telephone loans to commercial companies than to cooperatives, although the present wording of the statute under which REA operates clearly indicates an intent of Congress that preference be given to "existing facilities." But, Ellis wants this changed. And, he is not impressed by what he says is REA's explanation that it loans money on the basis of economic feasibility and not on the basis of whether the borrowers are cooperative or commercial organizations. He resented the fact that last year an estimated 75 per cent of the REA telephone loans went to commercial companies and only 25 per cent went to co-ops.

Ellis thinks that benefits of REA loans should not be restricted to farmers. In this he is perhaps reacting to a recent criticism by Budget Director Stans that "about one-half of REA's electric power goes to industries, communities, or non-farm families." Stans made that statement last month when he said "the startling fact is that three out of four new users (of co-op power) presently being added are now nonfarm users." Suburban residences, motels, factories, small communities, restaurants, military installations are now the main electric customers of REA cooperatives, according to the budget bureau boss.

Ellis' answer to this is that the REA Act says co-ops should serve unserved people in rural America. It does not specify "farmers." Thus, he said, all this talk about three out of four customers being non-farmers does not mean a thing. This writer's mind goes back to the days when Congress was arguing over the REA Act and whether it should be established, and he got the impression that the main objective *was* to serve the farmers.

Anyhow, ending on a political note, Ellis expressed both pessimism and optimism about the future. He says his pessimism would stay with him until Jan. 1, 1961. After that he thought he would be optimistic again, implying that there would be a new administration and others in Congress who would

take a different and more sympathetic look at the great "crusade."

One other speaker at the opening meeting of the NTCA was the outgoing president, Riggs Shepperd. He told the members that they should take a firm stand against any attempt to increase the 2 per cent interest rate on REA loans. He also urged grass-roots information programs in their towns and states. As far as new legislation is concerned, Shepperd urged support of the Curtis Bill to make REA a separate agency and the Humphrey-Price Bill (both in Congress) to remove control by the Secretary of Agriculture over the REA loan program.

Private Line Rates

The FCC says it hopes to speed up a final decision on the proper rates for private line telephone and teleprinter services provided by American Telephone & Telegraph Co. and Western Union. But the commission turned down a petition by a number of teleprinter customers for a quick separate ruling on the lawfulness of intercommunications teleprinter rates which went into effect on Dec. 2. The interim hikes netted AT&T an 8.5 million dollar increase in annual revenues and Western Union a yearly revenue boost of about 4.2 million dollars.

The commission, at the same time, ordered Hearing Examiner J. D. Bond to give it the record on private line rates as soon as he completes this phase of the long-range FCC investigation into all Western Union and AT&T rates and regulations. A commission spokesman said it would take between three and six months to complete the record on permanent private line charges.

Users seeking a quick decision on intercommunication teleprinter charges included: The American Newspaper Publishers Association, Chesapeake & Ohio Railway Co., Trans-Lux Produce News Co., Trans-Lux Corp., Translux Movie Ticker Corp., The Teleregister Corp., Association of Stock Exchange Firms, New York Stock Exchange and Commodity News Services, Inc.

To help speed up the proceedings the FCC has agreed on a procedural compromise under which so-called "recent interveners" (meaning those who got into the case after it was contested by others) will be given a chance to offer direct or rebuttal evidence in cost study matters. But they will not be permitted to cross-examine telephone and telegraph company witnesses on the complex and technical cost study testimony.

In another side-maneuver in this case, the AT&T Long Lines has urged the FCC to dismiss a supplemental complaint by Shenley Distilleries, Inc. for "damages" in the amount by which private line telephone rates produce more than 4 per cent return for the AT&T. Long Lines claims that the Shenley complaint is legally deficient, amounting to no more than "bare assertions wholly devoid of supporting facts."

Convention Calendar

1959

Association	*Date*	*City*	*Hotel*
Texas	Mar. 2, 3 and 4	San Antonio	Hilton
Kentucky	Mar. 3	Lexington	Phoenix
Iowa	Apr. 7 and 8	Des Moines	Fort Des Moines
Ohio	Apr. 13, 14 and 15	Columbus	Deshler Hilton
Illinois	Apr. 20 and 21	Peoria	Pere Marquette
Nebraska	Apr. 21 and 22	Lincoln	Cornhusker
Indiana	May 6 and 7	Indianapolis	Claypool
Wisconsin	May 13 and 14	Milwaukee	Plankinton House
Kansas-Missouri*	May 25 and 26	Kansas City, Mo.	Continental
Pennsylvania	June 1, 2 and 3	Buck Hill Falls	Buck Hill Falls Inn
California	June 3, 4 and 5	Los Angeles	Ambassador
Washington-Oregon*	June 11, 12 and 13	Seattle	Olympic
New York	June 15, 16 and 17	Schroon Lake	Scaroon Manor
Alaska	September	Anchorage	Unannounced
Tennessee	Sept. 9 and 10	Nashville	Hermitage
Arkansas	Sept. 14 and 15	Hot Springs	Arlington
Michigan	Sept. 15, 16 and 17	Grand Rapids	Pantlind
Rocky Mountain	Sept. 16, 17 and 18	Salt Lake City, Utah	Utah
New England	Sept. 21, 22 and 23	Bretton Woods, N.H.	Mt. Washington
USITA Annual Convention	Oct 11, 12, 13 and 14	Chicago	Conrad Hilton
Virginia	Oct. 29 and 30	Roanoke	Roanoke
Alabama	Nov. 9 and 10	Birmingham	Thomas Jefferson
Oklahoma	Nov. 18 and 19	Oklahoma City	Skervin

*Joint Convention

Pay-TV

Chairman John C. Doerfer of the Federal Communications Commission says that a realistic trial of pay-TV can be provided for, possibly before the end of 1959. Doerfer addressed an audience of 400 members of the radio and television executives' society on Feb. 4 in New York. He noted that Rep. Oren Harris (D., Ark.) last month introduced a resolution which would allow the FCC to authorize technical tests of the pay-TV system, but bans pay-TV without congressional approval. He further noted congressional requests that the FCC maintain a status quo on the pay-TV subject until Congress had had an opportunity to study the subject in greater detail.

However, said Doerfer, the FCC has invited pay-TV operators to submit plans under limitations that would protect the present free-TV system. "I am of the opinion," he added, "that somewhere between Mr. Harris' objective and that proposed by the commission, a trial of subscription (pay) TV system or systems can be provided for upon a realistic and meaningful basis—without endangering our free television system."

Doerfer added that the FCC would retain the status quo until after the first session of the 86th Congress, in the summer. Earlier, the National Broadcasting Co. (NBC) announced it would favor limited technical trials of pay-TV. The Columbia Broadcasting System (CBS) has opposed the trials on grounds that they would serve no useful purpose.

NBC has announced its support of a congressional resolution permitting federally authorized experimentation with pay-TV. The resolution (H. J. Res. 130), recently introduced by Representative Harris would prohibit any form of pay television in the absence of congressional legislation, but would also provide that the FCC could authorize technical tests of pay-TV in a single section of the country. Robert W. Sarnoff, NBC's chairman, said "the tests may serve to satisfy the view . . . that some form of test opportunity should be given the promoters of pay systems." The NBC chairman emphasized, how-

(Please turn to page 66)

Clarifying Responsibilities Through

Organizational Charts and Job Specifications

By KENNETH F. PELOQUIN*

ANALYSIS of plans of administrative organization and control, which have been developed by a large number of successful enterprises, shows that no matter how much the plans may vary in detail, they all incorporate the following basic elements:

(1) Constructive leadership,
(2) Development and administration of sound operating policies,
(3) Intelligent and effective utilization of executive personnel,
(4) Definition and development of individual duties and responsibilities,
(5) Active training programs,
(6) The means for measuring actual results against well established standards.

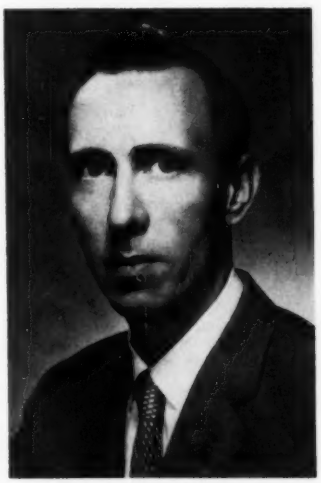
Of the six factors mentioned, "constructive leadership" is by far the most important and must be actively present if the organization is to be successful. To this end, the other factors play a supporting role. If they play a good supporting role, they enable top management to concentrate on its two most important functions—that is, the making of plans and policies to fit ever changing situations, and the execution of such plans and policies.

Sound Organization Plan

In order for these factors to effectively play their roles, there must be a sound organization plan. If the plan of organization is such, that the aims, as expressed in the clearly stated policies of the company, can be carried out by first line executives of adequate ability and experience, and working within well defined lines of responsibility and operating controls, the chief executive and other members of top management will be relieved of the pressure of daily operating details and freed to discharge their leadership functions.

Now the question arises, how do we get a sound plan of organization? Unfortunately, there is no ready-made formula or rule of thumb by which we can magically produce an organizational plan. It can only be developed through study, evaluation, and a good deal of hard work. However, the preparation of an organizational chart for the company as a whole, with auxiliary charts for each major department, is an essential first step in the analysis, clarification, and understanding of any organization plan.

The very process of charting the organization provides a good test of its soundness, as any organizational relationship which cannot be readily charted is likely to be illogical, and therefore confusing to those working under it. When completed, the organization chart provides top management with a picture of the organization as of a given moment of time, thus facilitating analysis, clarification and understanding of the plan by all concerned.



K. F. PELOQUIN

Job Specifications

When the organization chart has been completed, it must then be supplemented by written specifications outlining the essential duties and responsibilities for each job, or group of similar jobs, throughout the company. The clarification of job duties and responsibilities will serve the following purposes:

First, it gives each individual a clear understanding of his proper part and relationship in the organization as a whole, and as such will enable him to concentrate his full efforts toward accomplishing his specific objectives.

Second, it provides a basis for training new employes.

Third, it provides a basis for appraising and rating individual performance in terms of the requirements of the job.

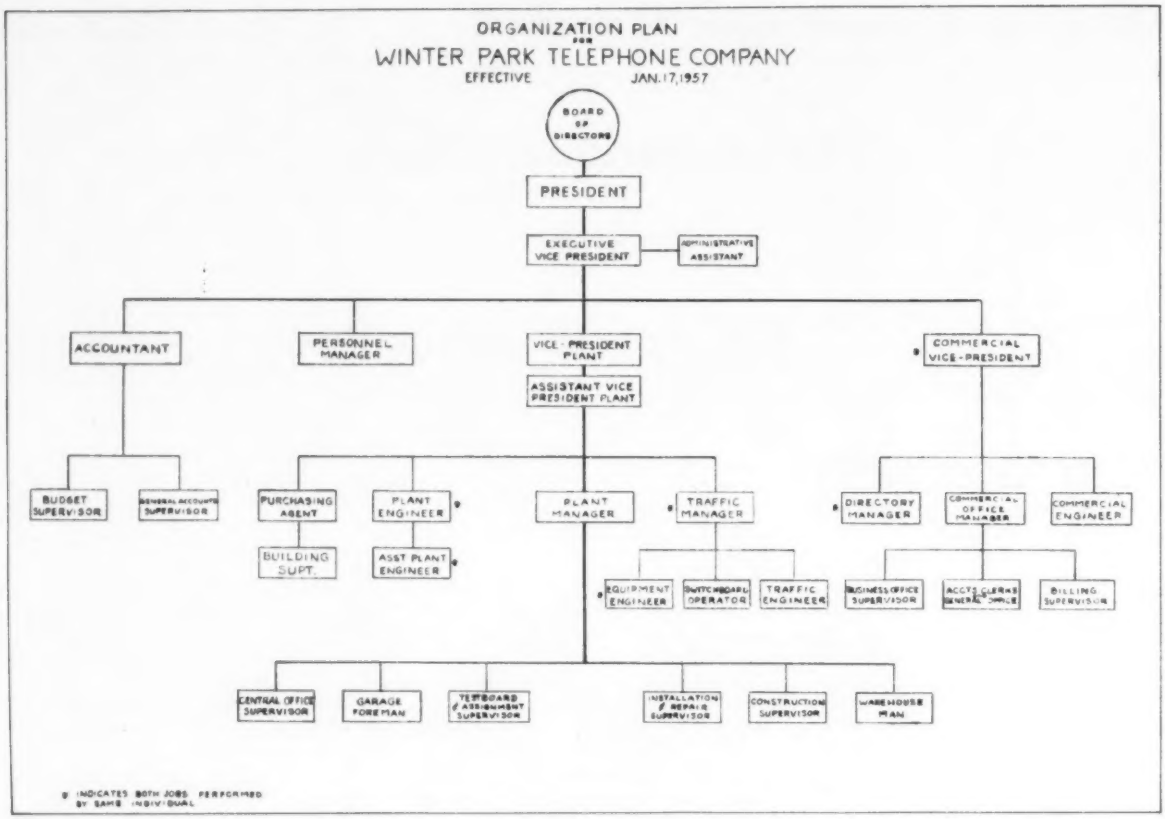
Fourth, it provides a basis for effective and equitable salary and wage control.

Preparing the Analysis

Of all the tasks required in developing the organization plan, the writing of job specifications is probably the most difficult and time consuming, and one which calls for a great deal of patience and tact if misunderstanding and friction are to be avoided.

Ordinarily, the job specifications should cover functions, responsibilities,

*Mr. Peloquin is secretary, Winter Park (Fla.) Telephone Co.



relationships, limits of authority, objectives and the means for measuring performance.

However, if only the primary duties and responsibilities are developed in the first approach, a great deal will have been accomplished. With each successive review and redrafting of the specifications, beneficial experience is obtained and the specifications become more inclusive and actually easier to prepare.

I would like to emphasize the necessity and importance of having the complete cooperation and support of top management in the development of the job specifications. The individual assigned to the task must be given the proper authority and cooperation, and all management personnel should be advised as to the purpose of the organizational study. This will avoid suspicion and insecurity, and dispel any fears of dislocation, since such is not the purpose of the organization evaluation.

Rather, it should be explained to all concerned that the purpose of the plan is to ultimately make their job simpler by eliminating duplication of effort, uncertainty as to responsibility and by delegating required authority more effectively.

Developing the Plan

I would like at this time to review for the reader a little of our experiences at the Winter Park Telephone Co. during the process of developing our organization plan.

At the time we began to develop our plan, some two years ago, we had nothing which even remotely resembled a formal plan of organization. What we did have was a number of managers and supervisors performing various duties and responsibilities which had accrued to them over a period of time. Their responsibilities were either due to their previous experience or seniority or because they happened to be the nearest one available at the time the job first needed to be done.

Now, I don't mean to imply that there was complete disorganization because such was not the case, but there was duplication or waste of effort, and an absence of specified objectives and controls. This made it all but impossible to properly fix responsibility for uncompleted or incorrectly performed work.

Charting the Organization

Our first step in developing the organization plan was to chart the organization, and this immediately disclosed a number of illogical situations —such as individuals reporting to two or more supervisors and the performance of unrelated duties which were confusing to the individuals involved and unquestionably were wasteful of effort and expensive to the company.

After much charting and recharting, (and incidentally during which time we also developed an ideal organization chart) we finally adopted a chart which was both practical and logical, and which has since been modified several times along lines dictated by our ideal chart.

Following adoption of the organization chart, we proceeded to the task of developing job duties and responsibilities, and here the difficulty really began. No one in the organization had any previous practical experience preparing such outlines, and so we weren't too certain as to just where to begin.

After much discussion we arbitrarily decided to start at the bottom of the chart with such jobs as linemen, installers, service representatives, cashiers, typists, and others; and thus work our way up through the organization. For many reasons, too numerous to mention at this time, let me say, "The bot-

(Please turn to page 44)

Joint Use Safety Considerations

By E. W. GLANCY*

IN ORDER to avoid any misunderstanding as to the nature of this subject material, it seems in order to point out that it is limited to the field of safety considerations on poles jointly occupied by electric and telephone facilities. Let's start by taking a look at the size of the present joint pole plant and the number of workmen who perform the day-to-day operations necessary to construct and maintain it.

In 1950, there were approximately 9.7 million poles which were jointly occupied by electric utilities and the various Bell System companies. Based upon recent rates of growth, today this figure is almost certainly over 13 million and is quite possibly nearing 14 million. Some 90,000 telephone workmen have occasion to climb poles in the area served by the Bell System.

I do not have any figures as to the number of electric workmen, but it seems reasonable to assume there are at least as many, and probably more, who construct and maintain electric facilities on poles in the areas where the Bell System companies operate. The safety of these workmen, our many customers, and the general public is a big responsibility. It is certainly a common objective of any utility, whether electric or telephone.

Telephone plant is generally operated at low voltages, ordinarily not considered hazardous to personnel. By proper, coordinated protective measures, the hazards of possible externally impressed voltages on telephone plant are minimized. If the situation were otherwise, the electric shock hazard to our subscribers alone would make such a situation intolerable. By the same token, we would certainly have more hazardous working conditions for workmen climbing or attempting to work on this pole plant.

Is Electric Shock Hog-Tied?

We realize the tremendous demands for electric power in recent years have more or less forced the use of higher and higher voltages, and the days when power could be economically supplied on a non-hazardous voltage basis are long since gone—if indeed they ever really existed.

Despite the presence of these hazardous voltages, we have millions of poles bearing attachments of both electric and telephone facilities. By bonding telephone cable strand to the multiground neutral, by the use of protective devices, drainage coils, high speed circuit breakers and other means of obtaining coordinated protection, we sometimes sit back a bit smugly and figure we have that old demon, electric shock, pretty well hog-tied. Certainly electric workmen go about their business on these jointly used poles without too much concern about electric shock hazard from telephone plant. Likewise, where electric facilities are physically far enough above them, telephone workmen don't worry too much about the hazards of electric shock from power facilities.

There are, however, two categories of electric facilities which are often physically close enough to telephone attachments so that simultaneous physical contact may be difficult to avoid. As might be expected, both have contributed to a number of electric shock accidents.

These two are: (1) street lights and (2) vertical power grounding conductors.

Street Lights

First, let's talk about street light brackets for a minute or two. There is concrete evidence that street light fixtures have been responsible for a lot of overtime on the part of guardian angels who watch over linemen. What else can we call it when an inspection of some 5,500 light fixtures revealed 570 defects in clearances, wire insulation, and deteriorated bushings? Thirty-two of these fixtures were found to be "hot"! This was the situation in the area of one western utility about two years ago.

The last yearly report on fatal accidents in the electric industry by Edison Electric Institute (EEI) showed one man killed by simultaneously contacting a street light bracket and telephone strand in 1956. During 1957, the Bell System also had a man killed by a street light bracket under similar circumstances. Accidents involving street light brackets have been occurring over the Bell System at the rate of about one per year for the past 20 years. Is this unavoidable? I don't think so.

All but one of these accidents involved series-fed street lights attached to poles also bearing telephone cable attachments. This seems rather significant for two reasons: One, the minimum separation between street light fixtures and communications cable is fixed by the National Electrical Safety Code as 1 foot, presumably because street lights and communications at-

*Mr. Glancy, who is with the American Telephone & Telegraph Co., delivered this address at the 1958 National Safety Congress sponsored by the National Safety Council.

tachments were often required to be at approximately the same grade or elevation. The second is that the supporting strand and metal sheath of our cable constitutes a fairly low impedance ground.

We realize, of course, we have not evaluated the factor of relative exposure as it may vary between street lights and cable as opposed to street lights and other types of telephone plant. The former combination is unquestionably by far more prevalent. Even so, there must still be an appreciable number of poles bearing street light fixtures and telephone facilities other than cable. Nonetheless, it seems significant that telephone cable was present in each of 18 accidents involving street light fixtures, and supplied the ground return in all but one case.

CASES OF ENERGIZED GROUND WIRES

(VOLTAGES MEASURED WITH HIGH IMPEDANCE VOLTMETER SHUNTED WITH 1500 OHM RESISTOR)

VOLTAGE ON GROUND WIRE	PRIMARY SUPPLY VOLTAGE	TRANSFORMER	INSTALLATION	REMARKS
18V	7200V	DOUBLE BUSHING	SINGLE PHASE	GROUND WIRE CONNECTED TO TRANSFORMER; CONNECTION TO MGN OMITTED.
30V	2400V	DOUBLE BUSHING	THREE PHASE	"
45V	2400V	DOUBLE BUSHING	SINGLE PHASE	"
60V	2300V	DOUBLE BUSHING	THREE PHASE	"
60V	2400V	DOUBLE BUSHING	SINGLE PHASE	"
40V	2400V	DOUBLE BUSHING	SINGLE PHASE	"
	(VOLTAGES MEASURED WITH HIGH IMPEDANCE VOLTMETER - NOT SHUNTED)			
480V **	6900V	DOUBLE BUSHING	SINGLE PHASE	"
1000V **	2400V	DOUBLE BUSHING	THREE PHASE	"
350V	6900V	DOUBLE BUSHING	SINGLE PHASE	"
1500V **	2400V	DOUBLE BUSHING	SINGLE PHASE	GROUND WIRE CONNECTED TO TRANSFORMER; CONNECTION TO MGN BURNED OPEN BY CONTACT WITH SECONDARY.

** LOST TIME ACCIDENT

Fig. 1

Bonding Street Light Fixtures

One remedy, of course, is to ground street light fixtures by bonding to telephone strand or the power multi-grounded neutral. This is not a new idea by any means. You may recall the tests made in Boston, Philadelphia and New York in the late 30's. From a safety standpoint, these tests must be deemed successful. There was, however, an initial increase in the rate of insulation failures of street light brackets. Presumably this represented the potentially hazardous fixtures which might well have broken down in the next few years even without bonding. Then too, those were the days of dry process porcelain insulation.

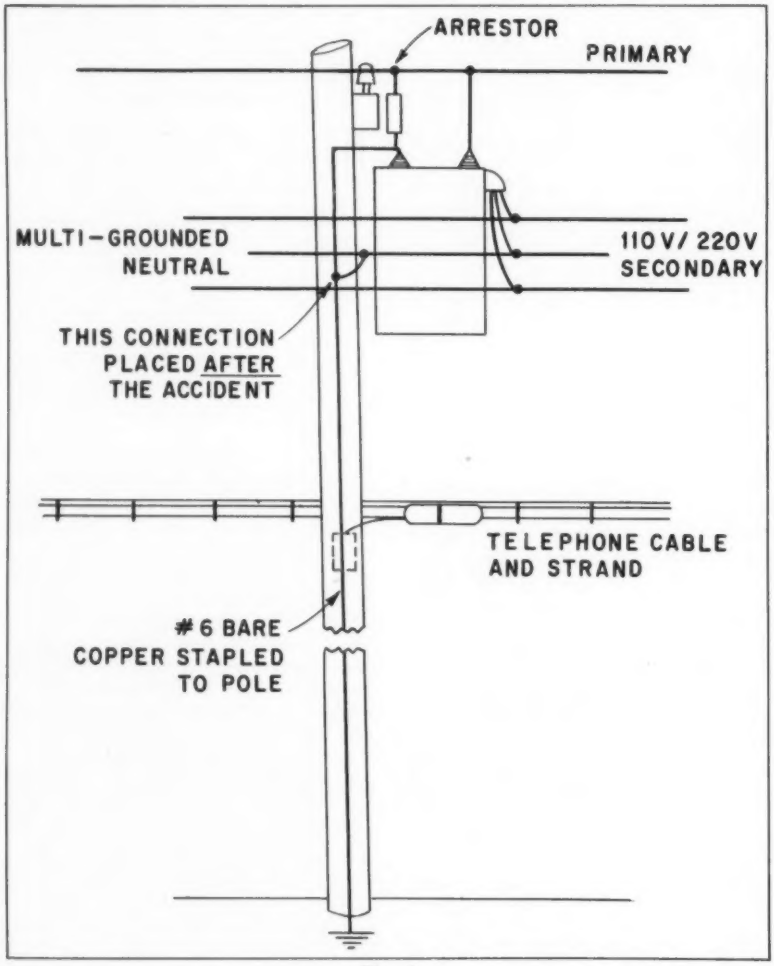


Fig. 2

However, the interest in bonding more or less seemed to die out after this. A temporary lull in the accident rate, coupled with a sense of cost consciousness and World War II, were perhaps contributing factors. These factors did not prevent the accidents to electric and telephone workmen in the next 18 years.

Currently, we understand a great many of the newer street lighting installations are being installed at higher levels, 2 or 3 feet or even more above telephone cable. Multiple type lighting fixtures operating from 120-volt secondaries also seem to represent a new trend. Both of these trends would seem to be steps in the direction of greater safety for both power and telephone workmen. Your industry, the electrical manufacturers, and all others concerned, are certainly to be commended for their efforts thus far to reduce the hazards of street light fixtures.

Ultimately, all of the older type street lights will be replaced. This is likely to take many years, however. Bonding these older type street light fixtures to telephone strand would have prevented most of the accidents from this source in the past and undoubtedly

can prevent more accidents in the years to come. Certainly, in the light of past experience, this would seem highly desirable at least where clearance between street light fixtures and telephone cable barely meets minimum requirements.

Vertical Ground Conductors

Let us now turn our attention to vertical ground conductors and their relationship to safety on jointly occupied poles. We, in the telephone industry, had long regarded the bare vertical power grounding conductor as a convenient and in general, safe point to attach drainage and protective devices or bonds to telephone strand. Certainly we had no experience to cause us to regard it with suspicion.

The first indication that ground wires might be dangerous, was a serious lost time accident which occurred about five years ago. A workman accidentally contacted a bare vertical grounding conductor from a single phase transformer with one hand, and then grasped the telephone strand and cable with the other hand. There was a difference of potential between these two supposedly grounded facilities of nearly 500 volts!

Investigation revealed the fact that there was no connection between the vertical grounding conductor and the power system multigrounded neutral. When the connection was made, the difference of potential between the grounding conductor and the cable dropped to less than one volt. A year or so later, this was followed by another lost-time accident of a similar nature. At the same time, we found there had also been a number of "near misses" which had not been reported. This spurred us to make an investigation of the situation.

PHASE VOLTAGE	2400V	7200V
FULL LOAD PRIMARY CURRENT	10.4 AMP	3.45 AMP
IR DROP ACROSS GROUND RESISTANCE	1040	345 VOLTS
IR DROP AS % OF PHASE VOLTAGE	43.3%	4.8%

Fig. 3

Grounding Conductor Survey

During the spring and summer of 1956, our field people checked grounding conductors on some 5,000 joint poles scattered over most of the operating areas of the Bell System. All poles checked carried telephone cable and vertical grounding conductors from transformers. Compared to other pole mounted facilities involving vertical grounding conductors, transformers are, of course, the most numerous. The survey was limited to poles carrying cable because of the need for an adequate ground to make the test.

Referring to *Fig. 1*, you will note there are 10 cases in this category. The first six were discovered as a result of the survey. The others were more or less discovered the hard way. The survey results suggested to us the possible existence of an alarming number of such cases over the areas served by the system. Note that all of these cases have one thing in common—an open or lacking connection to the system neutral. As you can see from *Fig. 2*, this forces the transformer to operate on a ground return basis.

Strange though it first appears, conditions are more favorable for high potentials on grounding conductors associated with 2,400-volt systems than those associated with higher voltage systems such as 7,200V.

The reason for this apparent paradox is that the potential rise we are

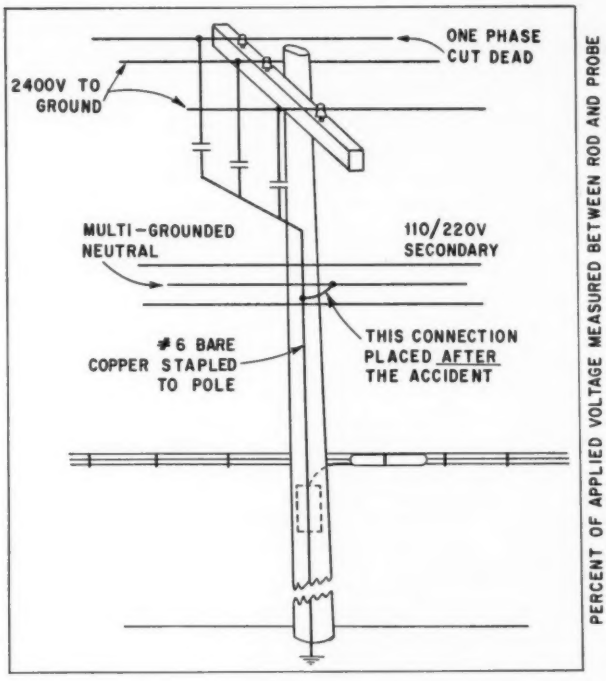


Fig. 4

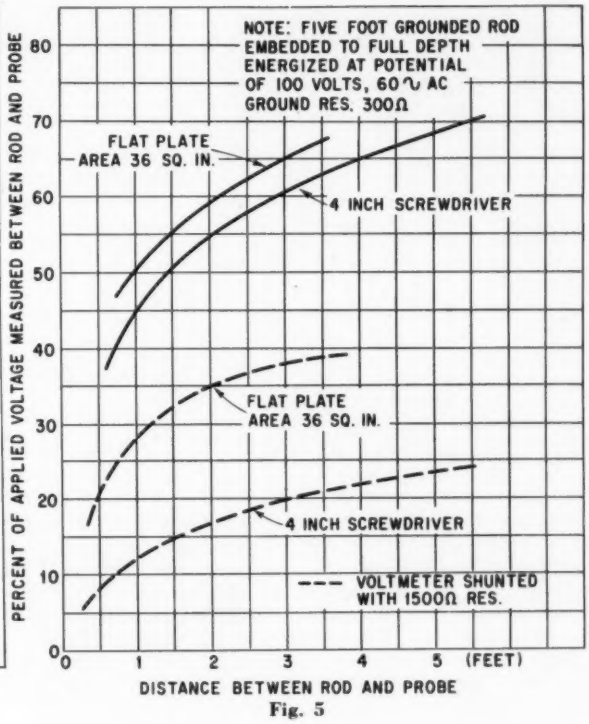


Fig. 5

concerned with is a function of the current through the grounding conductor. A given load on a transformer operating with a primary voltage of 2,400 volts requires three times as much current as the same load on a transformer operating with a 7,200-volt primary potential.

Hence, for a given ground resistance that is small enough that it does not control the magnitude of the current, the potential rise across it will be three times as great. Although 7,200-volt systems are likely to produce somewhat lower voltages on grounding conductors than 2,400-volt systems, the effect on voltage regulation at the subscriber's premises is also reduced and the condition is, therefore, less likely to be reported by the subscriber.

Phase Voltage Comparison

The following comparison shown on *Fig. 3* illustrates both of these points. Assume a 25 KVA transformer and a 100-ohm ground resistance.

Consider first the effect on service fed from the 2,400-volt system. In practice, the effect of a 43 per cent reduction on a 117-volt secondary is to put most appliances out of service. (There is, of course, the very real question as to how it would be possible for the subscriber's appliances to draw full load current if the line voltage dropped to 66-67 volts.) Compare this with a drop of 4.8 per cent, which would result in a line voltage of 112 volts instead of 117 volts when the 7,200V primary is used.

Our findings to date have indicated that this particular type of situation has always involved a double bushing transformer, and seven out of 10 cases have involved single phase installations. The latter figure probably reflects the greater number of single phase installations on joint poles. As to why no single bushing transformer installations have been involved, we really do not have a positive answer, although it is probably somewhat more difficult to commit this kind of a wiring error on a single bushing transformer.

This same error of omitting the neutral connection also occurred with a grounding conductor associated with a capacitor bank and resulted in a fatality about a year and a half ago. As you can see from *Fig. 4*, this particular case also involved an open circuit condition on one phase.

A potential difference of 1,200 volts was measured between the vertical grounding conductor and the telephone strand. We do not know exactly how long this condition existed before the accident occurred. The victim of this death trap happened to be a telephone company workman, although he could have just as easily been an electric company workman. Neither does it require much of a stretch of the imagination to see that a youngster playing in the vicinity of the pole could have been the victim.

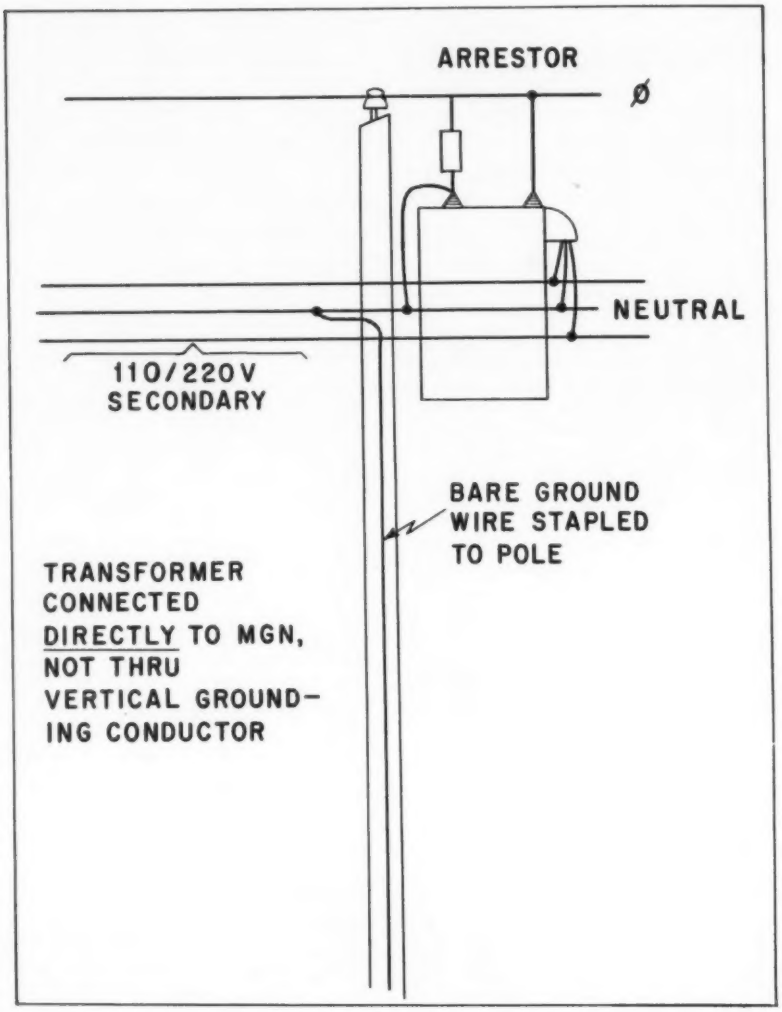


Fig. 6

This is the first accident case we have ever encountered which involved a grounding conductor from a capacitor bank. Compared to the number of transformer installations on jointly used poles, we believe capacitor banks on jointly used poles are relatively rare.

Multigrounded Wye Systems

We have wondered why this apparently sudden rash of cases of energized grounding conductors. Some of this we feel sure, must be attributed to the increasing use of multigrounded wye systems. After all, this is about the only situation where a bare grounding conductor on a jointly used pole is involved. Cutover jobs from one system to another have undoubtedly been a factor. One case we know was simply a result of an emergency pole replacement and the crew may well have been tired and eager to get home. Another was the result of arcing—here the neutral connection simply burned open.

I do not have any figures on lost time accidents in the electric industry as to accidents which can be charged to this particular situation. EEI reports one fatal accident occuring in 1956 in this category, however.

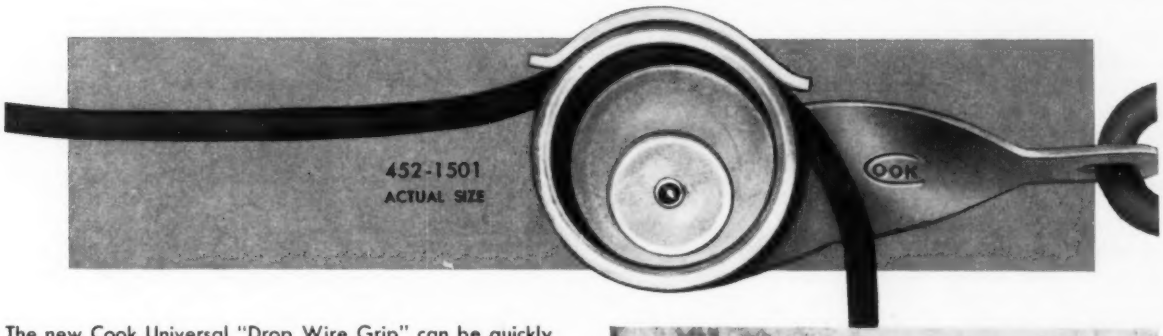
In addition to these cases of energized ground wires caused by omission of the connection to the neutral, we found four cases where vertical grounding conductors were energized because they were mistakenly connected to "hot" conductors instead of the neutral. Fortunately, none involved lost time accidents although this seems more good luck than anything else. Two involved connection to secondary voltages

(Please turn to page 40)

NEVER A SLIP when you install

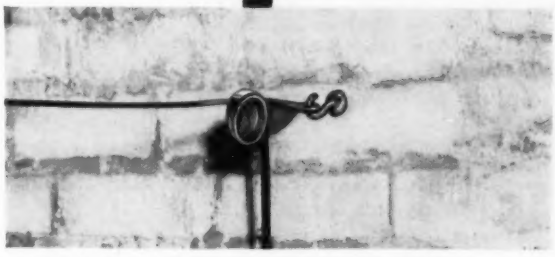
UNIVERSAL
Drop Wire Grip

A safe, fast and economical method of suspending drop wire spans to subscribers from pole, cross arm or messenger cable.



The new Cook Universal "Drop Wire Grip" can be quickly released for proper clearance adjustment or necessary changes WITHOUT THE USE OF TOOLS, and no nuts, bolts, washers or pins are required. A perfect intermediate drop attachment when routing a drop span around obstacles. It will not tear, cut or damage the wire sheath because of its firm, smooth, and uniform grip on the drop wire surface.

Made of durable stainless steel, the Cook "Drop Wire Grip" cannot rust or corrode, and will give years of lasting, trouble free service.



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THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

UP NORTH, in the largest state in the union, Alaska, they have some large telephone booths that appear to have been designed by Paul Bunyan. When we inquired as to the size, it was claimed that they are necessary because of the heavy clothing worn in winter—that a man must remove his heavy outer clothing to enter a conventional sized booth.

•

If you have ever become irritated when your telephone call to an office was "screened" with an abrupt "who's calling?" you have plenty of company, states the *Michigan Bell Magazine*.

A Michigan State University top administrator was so annoyed by this growing practice on the MSU campus that he suggested a telephone courtesy course for all clerical and secretarial employes of the school.

This, and other undesirable telephone practices, were discussed by university officials, who decided it was high time some sort of in-service training program was initiated. MSU's department of information service was given the job of staging a telephone and office-courtesy workshop for clerks and secretaries who answered 8,000 incoming calls a day on the university's 3,300 telephones.

Representatives of Michigan Bell were called in to discuss the problem and assist in working out details of the training course. Fifteen instructors from MSU's department of information services, personnel center, placement bureau and speech department were enlisted to handle the classes.

In all, 654 MSU employes took the course and MSU officials were pleased with the results. Plans are being made to offer more sessions in the future to new employes.

•

It is reported that the radio transmitter in Vanguard I, earth satellite powered by energy from the sun, has completed over seven months' service. This transmitter makes use of the silicon solar cells that convert sunlight into electric power.

Barring impact with meteorites or cosmic dust, it is claimed that the solar-energy converter has a life expectancy of up to 10,000 years. Estimated life of the Vanguard is 200 years.

•

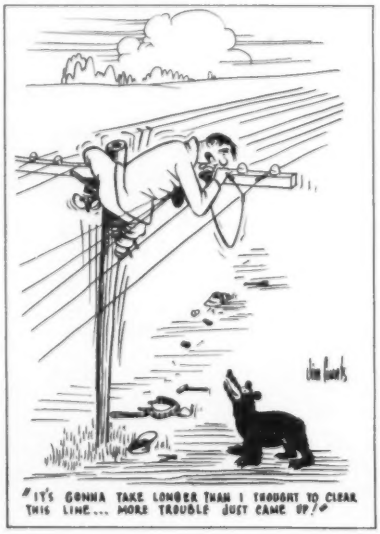
The Federal Bureau of Public Roads claims that last year traffic accidents cost the nation $7,255,600,000. This averages somewhat less than 20 million dollars a day—or about $13,800 a minute.

•

It is said, human nature is something that makes you swear at a pedestrian when you are driving, and at the driver when you are a pedestrian.

•

We have a letter from our old friend, H. F. Timmons, now residing in Mena, Ark., where he is recuperating from a serious operation.



Tim and the writer formerly worked for the same company out in Iowa. He also worked for Kellogg Switchboard & Supply Co. for several years prior to his recent retirement.

•

We note that Copperweld barbed wire is now available. It seems a pity that we did not have this type wire back in the old days when fences were frequently used for rural lines.

•

On a plane trip from Washington, D. C., recently, we approached New York's La Guardia Field in a normal manner and then pulled up and began to fly in a circle. The pilot came on the public address system and explained that our landing was being delayed due to rather unusual circumstances. Two dogs were playing on the runway and must be caught before we could land. We landed 10 minutes later, but did not see anything of the dogs.

•

A new device called the Electrowriter, an electronic longhand writer, was recently announced. It is claimed that this device can be operated over a standard telephone circuit. Used in the same manner as an ordinary pad and pencil, it produces instantly both local and remote records of the message.

These self-contained units range from the size of a desk calendar to that of a small adding machine. All Electrowriters are compatible and any desired number can be interconnected.

These machines, which are completely transistorized, will be leased to users. They are designed for easy maintenance by 108 service stations throughout the United States and Canada.

•

A school teacher in Hawaii recently called her father in Antrim, N. H., on his birthday.

The circuit over the new submarine cable was so good that she heard the Antrim fire whistle blow twice, announcing the monthly meeting of the Antrim fire department.

The teacher is of the opinion that this is the first time the Antrim fire whistle has ever been heard in Hawaii. And she's right, thanks to the Hawaiian Telephone Co.

•

We are advised not to put off until tomorrow what we can do today—by then it will probably be banned, restricted or higher taxed.

•

The National Safety Council's booklet, "What to Do About Home Injuries," can be put to good use in checking your home for hazards. It also provides valuable information on first-aid action that can be taken in the event of a serious accident, before the doctor comes.

•

A friend is described as a speaking acquaintance who also listens.

•

It is reported that Western Electric Co. paid nearly 29 million dollars for plastics in 1957. This is greater than the cost of steel, the perennial runner-up to copper, as the company's most-used raw material.

Plastics are used as cable sheathing, wire insulation, for telephones and relay-housings, and as windings between the leaves of telephone coils.

•

Pity the poor American business man. When he comes up with something new, the Russians invent it a week later and then the Japanese make it cheaper!

•

When the telephone is in use, a device called the "Sound Husher" automatically lowers the volume on any TV, radio or Hi Fi to which the device is connected. Picture reception on TV is not affected, and the volume returns to normal when the receiver is replaced.

•

In this atomic era, men who are smart enough to destroy the world shouldn't be dumb enough to do it.

Chain of Command

"It is better to have a lion at the head of an army of sheep, than a sheep at the head of an army of lions." —DE FOE.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. What can be done to prevent the insulation of jumper wire from burning during the soldering of connections on a main frame?

A. Careful soldering practices should prevent this insulation burning. The soldering iron should be of the proper temperature and be held in contact with the connection for a short interval.

There is also a plastic insulation for jumper wire that, it is claimed, will not shrink back, flare or melt in contact with a hot soldering iron or molten solder.

It is further claimed that this insulation will withstand molten solder dipping at 400° C for five minutes without the physical characteristics of the insulation being affected.

•

Q. We plan to pressurize our exchange cable plant and would appreciate information on the advantages as well as disadvantages of compressor dryers and nitrogen gas supplied from cylinders.

A. We are advised by one manufacturer that the use of dry air from a compressor dryer substantially reduces the cost of cable pressurization when compared to the cost of using nitrogen gas as a pressure source. A cylinder of nitrogen gas installed in the average urban exchange costs at least $8.00, or roughly four cents per cubic foot of gas.

For rural areas and remote locations, this cost can vary from $10 to $20 a cylinder or from five to 10 cents per cubic foot of gas.

On the other hand, the cost of dry air from a compressor dryer is less than a half cent per cubic foot or 1/8 the cost of nitrogen in an urban exchange and from 1/10 to 1/20 the cost of nitrogen in rural exchanges.

Experience has indicated that the average exchange cable consumes between two and five standard cubic feet of gas per mile per day. Using the minimum figure, for an exchange with 15 miles of cable, the daily consumption of gas would be approximately 30 standard cubic feet.

•

Q. Can you please advise us when voice frequency repeaters of the hybrid type should be used?

A. This repeater is designed to provide a substantial gain for circuits having a high transmission loss. The large gains required to bring these circuits up to toll standards are well within the capabilities of this repeater.

The frequency response of the amplifier in one repeater of this type varies from less than 1 db over a range of 300 to 5000 cycles, and it has a maximum insertion gain of 35 db.

•

Q. What features should be provided on a wire chief's test set designed for use in a small dial exchange?

A. One test set designed for this purpose is equipped with a volt-ohm-milliammeter that is used to test resistance, amperes and voltages. This instrument combines a selection of ac and dc voltage, direct current and resistance ranges. The following tests may be made with this test set:

(1.) Foreign potential tests — for battery on Tip and Ring.

(2.) Loop leakage tests—high and low leakage.

(3.) Tip and ring leakage tests—high and low leakage.

(4.) Capacitance tests—for top, ring and loop capacitance.

(5.) Selector tests—access is provided to a local test selector.

(6.) Remote testing—provision for testing distant offices.

(7.) Ringing tests—frequency, code or superimposed ringing.

(8.) Heat coil test—access to line equipment if heat coil is closed.

(9.) Reverse test — reverses test leads.

(10.) Howler — may be applied through test selector or MDF shoe.

In addition to the above-mentioned tests, this set is arranged for an office line for communication purposes.

ELECTRONIC SECRETARY

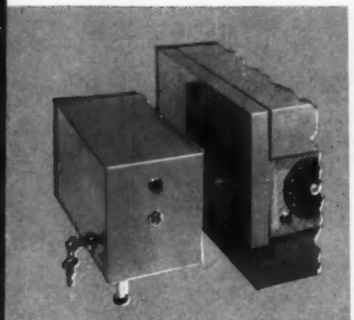
MODEL
DCR-1

*

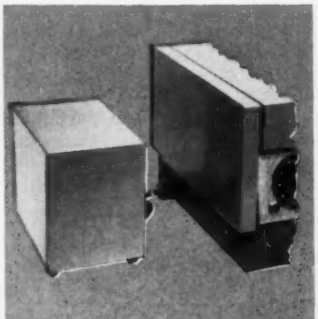
answering service

provides a complete phone answering service for your subscribers and brings you a steady flow of revenue!

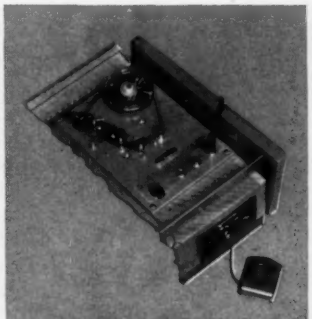
With the *Electronic Secretary* answering service, your subscriber no longer worries about missing important phone calls. It answers his phone courteously, dozens of times a day. It works around the clock, records name, number and message, or tells the caller to call another number—a complete secretarial service! A wonderful source of revenue for the telephone company! For complete information, call your distributor (listed below).



Remote Call-Back addition for Model DCR-1. Subscriber hears recorded messages by transmitting a tone signal over remote phone. The Electronic Secretary then switches to normal operation.



Voice Control Attachment for Model DCR-1. Permits caller to record message for extended period of time. Message is recorded as long as caller continues speaking. This attachment is ideal for receiving orders.



Tape Adapter modifies the DCR-1 so that user can record outgoing messages in his own voice. Includes microphone and endless tape cartridge (1½ to 3 minutes). Message can be changed as often as desired.

Model T-t Electronic Secretary. Answering unit only. User records outgoing message in his own voice. Endless tape cartridge (30 seconds to 2½ minutes). Message can be changed as often as desired.

ELECTRONIC SECRETARY INDUSTRIES, INC.

DISTRIBUTED BY: **AUTOMATIC ELECTRIC SALES CORPORATION**, NORTHLAKE, ILLINOIS

LEICH SALES CORPORATION, 427 WEST RANDOLPH STREET, CHICAGO 6

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THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

INFORMATION operators have an important responsibility in conveying information requested by subscribers. Perhaps the greatest error an information operator can make, is to report that a subscriber does not have a telephone when, as a matter of fact, he does have a telephone.

An information operator must be patient, tactful, and resourceful, and must be able to spell. She must realize that names which have the same pronunciation are frequently spelled differently, such as, "Snyder," "Schneider," and "Snider."

In Traffic Question No. 2, when a calling party indicates that the party he desires has a telephone, and no acceptable listing is shown for that party, if the caller says that the desired telephone is, or may be a paystation, the operator should explain that she does not have a record of paystations and, if he insists upon obtaining the number, the operator will refer the calling party to her supervisor, who will take the necessary action in accordance with the routine prescribed.

For the condition outlined in Traffic Question No. 4, if the subscriber indicates that the desired telephone was installed within the last few days, or that the call is very urgent, the operator will proceed as follows:

(1) If the desired number is in an office served by her information center, or is a local service point from any of the offices served by her information center, the operator should say, "I'm sorry, that number is not yet listed in our records. If you will give me your number, we will make a further search and call you." She should then make a memorandum of the details of the call for further investigation and a later report to the subscriber and notify her supervisor. The supervisor will try to obtain the desired number, if possible, in accordance with local instructions and give a report to the subscriber.

(2) If the desired number is in an office *not* served by the operator's information center, and it is for a point in a Suburban Frequently Reprinted Directory, the operator will say, "I'm sorry, that number is not yet listed in our records. If you will give me your number, we will make a further search and call you." The operator will then make a memorandum of the details of the call and refer it to the supervisor. The supervisor will send the memorandum to the person locally designated to handle such calls, with instructions to call the information center serving the called point.

(3) In other cases, regardless of whether the desired number is located at an "A" board toll or long distance point, the information operator will say, for example, "John Doe isn't in my (La Grange) directory, but long distance will take your call."

It is most important that the information operator always leave the subscriber connected and remain cut in while conducting her search for the desired number, that is if possible. If it is necessary to cut out for any reason, the operator should excuse herself to the subscriber, saying for example, "I'm trying to get the number for you. One moment, please."

Whenever the operator finds that in her search for the number she has not spoken to the calling party for about 30 seconds, she should give a progress report. It is unnecessary to give a progress report if the operator has said anything in the subscriber's hearing during that period, since any communication serves as an indication that the operator is working on his call. The progress report should be brief but appropriate, such as:

"I'm sorry to keep you waiting."
"I haven't found it yet."
"I'm (still) looking for the number."
"I'm (still) trying to get the number for you."

In days gone by, information operators, as well as operators in small communities, furnished information of all kinds—from what time the train left for Podunk—to who was ill at John Brown's home.

While some offices still locate by street address, this service has been discontinued in most of the larger exchanges.

Many years ago, when the writer served as information operator in the Springfield exchange of the Central Union Telephone Co., (now Illinois Bell), she knew the number of every business firm in the city of Springfield. What a task it would be to commit to memory today the numbers of all of these places! Time and progress bring many changes and we have come a long way in the telephone industry since names and numbers of subscribers were entered on a piece of oilcloth and hung on the operating room wall.

Traffic Questions

(1) How do you record a "no trunk" ticket?

(2) How should the information operator proceed when although a subscriber indicates that the desired party has a telephone, no acceptable listing is shown?

(3) How should the supervisor proceed when a subscriber is referred to her for the number of a paystation?

(4) When an operator refers a call to the supervisor on which the calling party has indicated that the desired telephone was installed within the last few days, or that the call is very urgent, what action should be taken by the supervisor?

(5) Should the information operator always leave the subscriber connected and remain cut in while conducting her search for the desired number?

Answers are presented on page 59.

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Teletypewriters and telephones are working partners. Teamed, they offer a two-way solution to a major business problem—fast, effective communications. Offering both, you sell a complete service.

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SUBSIDIARY OF *Western Electric Company* INC.

Increasing Cable Pair Conductivity

By JOHN A. BRACKEN

UNDER certain conditions, proper operation of remotely controlled equipment necessitates increasing the conductivity (current carrying capacity) of the assigned cable pair between the central office main distributing frame and the distant cable terminal. To accomplish this, the cable pair electrical resistance is reduced by connecting several cable conductors in parallel.

This arrangement is shown in *Fig. 1*. Here, two 10-ohm conductors are connected in parallel. It is evident that, on account of the increase in conductor area due to paralleling, an electric current flowing from point "A" to "B" *(Fig. 1)* has the choice of two paths to reach "B", with the result that the current divides in accordance with the conducting power (called conductance) of the two conductors.

The term "conductance" expresses the facility with which a conductor permits current to flow, and is the inverse or reciprocal of electrical resistance. The unit of conductance is called a "mho," and is represented by the symbol "G," which for any single conductor resistance (R) is equal to $1 \div R$.

EXAMPLE: What is the joint conductance of the conductors connected in parallel as shown in *Fig. 1*.

(1) The resistance (R) of each conductor is 10 ohms.

(2) Then the conductance (g) of the first conductor is $g_1 = 1 \div R$ or $1 \div 10 = 0.1$ mho, and for the second conductor it is $g_2 = R$ or $1 \div 10 = 0.1$ mho.

(3) The joint conductance of the two conductors in parallel is equal to $G = g_1 + g_2$ or $0.1 + 0.1 = 0.2$ mho's.

What is the joint resistance? It is equal to $JR = 1 \div G$ or $1 \div 0.2 = 5$ ohms. The value in ohms of the two conductors when connected in parallel, is half that of either conductor alone. Therefore, the conductivity will be doubled.

In order to determine the required number of cable pairs connected in parallel to produce a desired increase in conductivity, the following methods are applicable.

EXAMPLE: How many cable pairs joined in parallel will be required to furnish the necessary conductivity, using ground return, to transmit 400 milliamperes from the 24-volt battery, shown in *Fig. 2*, to the equipment located at the end of a 19-gauge cable, one mile from the central office? Applying method 1:

(A) The requirement of the equipment is such that, at all times, regardless of the load, there should be sufficient EMF to operate the equipment properly. Consequently the minimum allowable EMF on which the equipment will operate must be known. In this example, it is 16 volts, in which case the 24-volt battery *(Fig. 2)* will

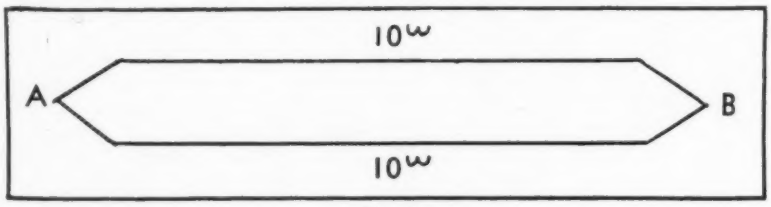

Fig. 1

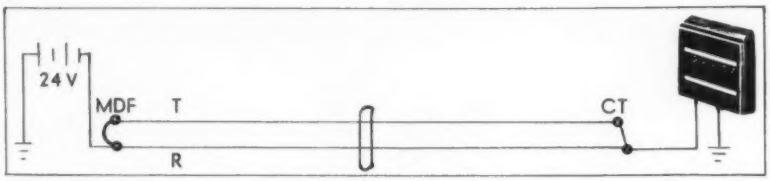

Fig. 2

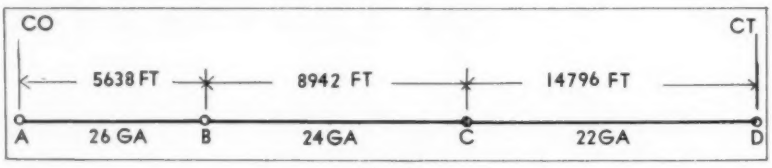

Fig. 3

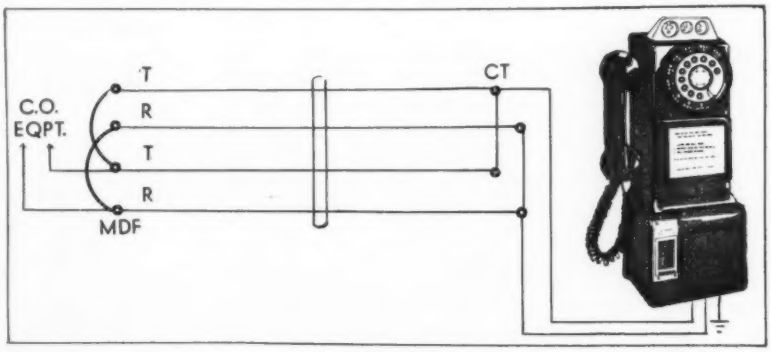

Fig. 4

CABLE SINGLE CONDUCTOR RESISTANCE AT 68° F.

Copper Wire A.W.G.	Circular Mils	Approx. Ohms Per Mile	Approx. Ohms Per 1000 Feet	Approx. Ohms Per Ft.	Approx. Feet Per Ohm
19	1288	42	8	0.008	125
22	642	84	16	0.016	62
24	404	136	26	0.026	39
26	254	216	41	0.041	24
28	160	343	65	0.065	16

Table 1

CABLE PAIR LOOP RESISTANCE AT 68° F.

Copper Wire A.W.G.	Approx. Ohms Per Loop Mile	Approx. Ohms Per 1000 Loop Ft.	Approx. Loop Feet Per Ohm
19	84	16	62
22	168	32	31
24	272	52	20
26	432	82	12
28	686	130	8

Table 2

permit a drop in voltage over the cable conductors of 24 — 16 = 8 volts.

(B) The equipment operating current is 400 milliamperes, then by Ohm's law the maximum allowable conductor resistance in the cable between the central office main distributing frame (MDF) and distance cable terminal (CT) will be R = E ÷ I, or 8 ÷ 0.400 = 20 ohms.

(C) Obtain from *Table 2* the loop resistance per mile of one 19-gauge cable pair. Loop resistance is the resistance of the cable pair when connected in series. The resistances given in the table for the various size cables are approximate values, being based on the length of the cable sheath. However, because of spiralling the cable pairs within the cable sheath due to transposing, their actual length varies from 3 to 4 per cent more than the length of the cable sheath. Therefore, their true resistance will be slightly greater than when calculated on the basis of actual cable sheath length only.

(D) According to *Table 2*, the loop resistance per mile of one 19-gauge cable pair is 84 ohms.

(E) Divide the loop resistance by four, or 84 ÷ 4 = 21.

(F) Divide this result by the maximum allowable conductor resistance, or 21 ÷ 20 = 1.05, the required number of cable pairs.

Applying method 2:

(a) Obtain from *Table 1* the ohms per mile of one 19-gauge cable conductor. According to the table, it is 42 ohms.

(b) Divide 42 by the maximum allowable conductor resistance, or 42 ÷ 20 = 2.1.

(c) Divide this result by two, or 2.1 ÷ 2 = 1.05 pairs as before. In practice, one cable pair connected in parallel, as shown in *Fig. 2*, is considered sufficient to provide the necessary conductivity.

To use complete metallic instead of ground return, the required number of cable pairs will be equal to 4 × 1. 05 = 4.2 pairs. For all practical purposes, four cable pairs prove adequate, wherein the tip conductor of each pair is connected to the positive terminal of the 24-volt battery, and the ring conductors to the negative terminal of the battery.

In cases where a combination of cable gauges are involved, it will be necessary to calculate the loop resistance of each length of cable separately and then add the total resistance in ohms.

For example, consider a paystation located at the end of the combination cable shown in *Fig. 3*, consisting of 5,638 feet 26-gauge, plus 8,942 feet 24-gauge, plus 14,796 feet 22-gauge, a total of 29,376 feet times 0.00019, or 5.6 miles. Assume that the paystation coin box relay has a resistance (R_1) of 1,100 ohms, requiring an operating current of 65 milliamperes at 110 volts direct current. How many pairs in the combination cable shown in *Fig. 3* will be required to provide the necessary conductivity? Applying method 1:

(A) The maximum allowable resistance in the cable conductors is R = E ÷ I — R_1 or 110 ÷ 0.065 = 1692 — 1100 = 592 ohms.

(B) Referring to *Fig. 3*, the loop resistance of one cable pair between the central office and the distant cable terminal may be obtained by the formula: R = KL ÷ CM × 2, where R equals loop resistance, K equals 10.4, L equals length of cable conductor in feet, and CM equals circular mils, which for the combination cable shown in *Fig. 3* are given in *Table 1*—where for the 26-gauge wire equals 254, the 24-gauge wire 404, and the 22-gauge wire 642 circular mils.

(C) Then the loop resistance in the section A to B *(Fig. 3)* will be R = KL ÷ CM × 2 or, 10.4 × 5638 ÷ 254 = 231 × 2 = 462 ohms; for section B to C it is 10.4 × 8942 ÷ 404 = 230 × 2 = 460 ohms; for section C to D it is 10.4 × 14796 ÷ 642 = 239 × 2 = 478 ohms.

(D) Then 462 ohms plus 460 ohms plus 478 ohms equals 1400 ohms divided by 4 = 350.

(E) 350 ÷ 592 = 0.59 pairs.

Applying method 2:

Obtain the maximum allowable resistance as in item "A" above. Then by means of the equivalent length multiplying factors in *Table 3*, change the length of the 24 and 26-gauge cables, shown in *Fig. 3*, to an equivalent length of the 22-gauge cable, it being the greater length.

To accomplish this proceed as follows:

(1) In *Table 3*, in the vertical column under the heading "CABLE SIZE" locate the numbers 22, 24 and 26.

(2) Move horizontally to the right of these numbers to the respective spaces directly below the heading "22 GA."

(Please turn to page 44)

EQUIVALENT LENGTH MULTIPLYING FACTORS

Cable Size	19 Ga.	22 Ga.	24 Ga.	26 Ga.	28 Ga.
19	1.0	0.498	0.313	0.197	0.126
22	2.0	1.0	0.63	0.395	0.249
24	3.0	1.6	1.0	0.62	0.395
26	5.0	2.5	1.6	1.0	0.62
28	8.0	4.0	2.5	1.6	1.0

Table 3

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with LEICH's PABX Sales Kit

Ever have trouble showing and comparing PABX systems to a prospect? Leich's PABX Sales Kit is an excellent solution. It lets you show a prospect Leich's complete line of PABX's in a matter of minutes.

A practical, easy-to-read chart tells at a glance the capacity, type of attendant's cabinet, switchboard, and other information about each of Leich's PABX systems.

Individual brochures help you do a more complete selling job. These brochures cover Leich's popular 40A PABX, other PABX's with keyset turrets, and PABX's with floor-type cabinets.

Write for Leich's PABX Sales Kit today.

LEICH PABX DI

for faster, more

TYPE	LINES	LINKS	CITY TRUNKS	TYPE OF ATTENDANT CABINET
40A	40 Not expandable	6	10	See Fig. B. May be used with without turret.
88A	88 Not expandable	9	10	See Fig. B. May be used with without turret.
100A	100 Not expandable	10	10	See Fig. A
100C	100 per bay, expandable	15 per 100 lines	See brochure	See Fig. A
100T	100 per bay, expandable.	15 per 100 lines	See brochure	See Fig. B or C. May be used with without turret.

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Minutes

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SWITCHBOARD UNIT	POWER	TELEPHONE INSTRUMENTS	STANDARD SERVICE FEATURES	OPTIONAL SERVICE FEATURES
Steel cabinet with hinged doors front & back. 72" high, 48" wide, 15" deep. All-relay operation.	Ringing & talking supply contained in switchboard unit. Standby batteries, if required, are mounted externally.	Standard telephone instruments are used on all Leich PABX's. Push-buttons & special wiring not required	2-digit local dialing, local links not tied up on city trunk calls. Consultation & transfer service. (SEE INDIVIDUAL BROCHURE)	A wide variety of optional service features is available on Leich PABX's. (See individual brochures for specific features.)
Steel cabinet with sliding doors front & back. 66" high, 66" wide, 15" deep. All-relay operation.	Ringing supply contained in switchboard unit. 48 volt battery & charger or battery eliminator are mounted externally.		3-digit local dialing, local links not tied up on city trunk calls. Consultation & transfer service. (SEE INDIVIDUAL BROCHURE)	
Steel cabinet with sliding doors front & back. 66" high, 66" wide, 15" deep. All-relay operation.	Ringing supply contained in switchboard unit. 48 volt battery & charger or battery eliminator are mounted externally.		3-digit local dialing, local links not tied up on city trunk calls. (SEE INDIVIDUAL BROCHURE)	
Steel cabinet with sliding doors front & back. 63" high, 66" wide, 15" deep. Power Bay 67" high, 24" wide. Trunk Bay 67" high, 20½" wide, 15" deep. All-relay operation.	Ringing supply mounted on Power Bay. 48 volt battery & charger or battery eliminator are mounted externally.		3-digit local dialing. (SEE INDIVIDUAL BROCHURE)	
Steel cabinet with sliding doors front & back. 66" high, 66" wide, 15" deep. Power Bay 67" high, 24" wide. Trunk Bay 67" high, 20½" wide, 15" deep. All-relay operation.	Ringing supply mounted on Po... Bay. 48 volt battery & charger or ba... eliminator are mounted external...		...git local dialing. (SEE INDIVID... BROCHURE)	

ATTENDANT'S CABINETS

LEICH SALES CORPORATION • 427 WEST RANDOLPH STREET • CHICAGO 6, ILLINOIS

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SOUTHWEST: 1227 SLOCUM STREET, DALLAS 7, TEXAS
EAST: 3651 CONNECTICUT AVENUE, YOUNGSTOWN, OHIO
SOUTHEAST: 5126 SOUTH LOIS ST., TAMPA 11, FLORIDA

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Show Your Complete Line in

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Ever have trouble showing and comparing PABX systems to a prospect? Leich's PABX Sales Kit is an excellent solution. It lets you show a prospect Leich's complete line of PABX's in a matter of minutes.

A practical, easy-to-read chart tells at a glance the capacity, type of attendant's cabinet, switchboard, and other information about each of Leich's PABX systems.

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Write for Leich's PABX Sales Kit today.

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for faster, more

TYPE	LINES	LINKS	CITY TRUNKS	TYPE OF ATTENDANT CABINET
40A	40 Not expandable	6	18	See Fig. B. May be used with without turret.
88A	80 Not expandable	9	16	See Fig. B. May be used with without turret.
100A	100 Not expandable	10	10	See Fig. A
100C	100 per bay, expandable	15 per 100 lines	See brochure	See Fig. A
100T	100 per bay, expandable	15 per 100 lines	See brochure	See Fig. B or C. May be used with without turret.

LEICH

Subsidiary of **GENERAL TELEPHONE**

Minutes

How to Sell Your LEICH PABX Prospects

L TELEPHONE SYSTEMS

fficient business communications

SWITCHBOARD UNIT	POWER	TELEPHONE INSTRUMENTS	STANDARD SERVICE FEATURES	OPTIONAL SERVICE FEATURES
Steel cabinet with hinged doors front & back. 72" high, 40" wide, 15" deep. All-relay operation.	Ringing & talking supply contained in switchboard unit. Standby batteries, if required, are mounted externally.	Standard telephone instruments are used on all Leich PABX's. Push-buttons & special wiring not required.	2-digit local dialing, local links not tied up on city trunk calls. Consultation & transfer service. (SEE INDIVIDUAL BROCHURE)	A wide variety of optional service features is available on Leich PABX's. (See individual brochures for specific features.)
Steel cabinet with sliding doors front & back. 69" high, 56" wide, 15" deep. All-relay operation.	Ringing supply contained in switchboard unit. 48 volt battery & charger or battery eliminator are mounted externally.		3-digit local dialing, local links not tied up on city trunk calls. Consultation & transfer service. (SEE INDIVIDUAL BROCHURE)	
Steel cabinet with sliding doors front & back. 69" high, 56" wide, 15" deep. All-relay operation.	Ringing supply contained in switchboard unit. 48 volt battery & charger or battery eliminator are mounted externally.		3-digit local dialing, local links not tied up on city trunk calls. (SEE INDIVIDUAL BROCHURE)	
Steel cabinet with sliding doors front & back. 69" high, 56" wide, 15" deep. Power Bay 67" high, 56" wide. Trunk Bay 67" high, 39½" wide, 15" deep. All-relay operation.	Ringing supply mounted on Power Bay. 48 volt battery & charger or battery eliminator are mounted externally.		3-digit local dialing. (SEE INDIVIDUAL BROCHURE)	
Steel cabinet with sliding doors front & back. 69" high, 56" wide, 15" deep. Power Bay 67" high, 56" wide. Trunk Bay 67" high, 39½" wide, 15" deep. All-relay operation.	Ringing supply mounted on Power Bay. 48 volt battery & charger or battery eliminator are mounted externally.		3-digit local dialing. (SEE INDIVIDUAL BROCHURE)	

ATTENDANT'S CABINETS

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manufacturers of telephones, switchboards and related apparatus since 1907

Six Telephone Loans Approved By REA

NEARLY 13,000 subscribers will receive new or improved telephone service as the result of the following six telephone loans approved during the week of Jan. 26 by the Rural Electrification Administration, the U. S. Department of Agriculture announced on Feb. 2.

Northern Kansas Telephone Co., Ottawa; $2,245,000; Jan. 26.

This loan will finance facilities to furnish initial service to 1,962 subscribers, improve service for 2,542 present subscribers, and complete the authorized system.

The existing subscribers now are served by 13 exchanges, owned and operated by the United Telephone Co. of Kansas. They are located at: Altoona, Benedict, Buffalo, Coyville, Fall River, LaFontaine, Mapleton, Mound City, Neosho Falls, Piqua, Quincy, Thayer, and Toronto.

The present subscribers include 579 families who own their lines. They plan to abandon these facilities and become regular subscribers of the Northern Kansas company.

The Quincy automatic exchange will be enlarged and retained in the expanded system. New automatic central offices will replace the Mound City common battery exchange and the magneto facilities in the remaining 11 exchanges.

This borrower has now received REA loans totaling $4,426,000 which will enable it to furnish new and improved service to a total of 9,468 subscribers. Of the proposed 32 exchanges, 14 are in operation providing dial service to approximately 3,300 subscribers.

Thomas E. Gleason is president of the Northern Kansas company.

•

Western Counties Telephone Corp., Marathon, N. Y.; $1,064,000; Jan. 26.

This loan will enable the borrower to furnish initial service for 648 subscribers and to improve service for 1,741 subscribers. The present subscribers receive magneto service through the Darien Telephone Co. and the Spencer-Van Etten Telephone Co., Spencer. These companies, which the borrower plans to acquire, have central offices at Corfu, Darien, Spencer, and Van Etten.

New buildings to house automatic equipment, commercial offices, garage and storeroom facilities will be constructed at Corfu and Spencer. A new automatic office building will be built at Darien. A portion of the loan will be used to complete the authorized system.

REA loans to this borrower now total $1,438,000. This will make possible new or improved service for 3,342 subscribers. The completed system will consist of automatic offices at Corfu, Darien, Marathon and Spencer.

H. Russell Cammer is president and manager of the Western Counties Corporation.

•

Houston County Telephone Co., Inc., Crockett, Tex.; $2,190,000; Jan. 26.

The new borrower plans to furnish initial service to 1,791 subscribers and to improve service for 1,935 subscribers. As a nucleus for this new service, the borrower has recently acquired the Houston County Telephone Co., Houston, now furnishing common battery service thru exchanges at Crockett and Grapeland, and magneto service through the Lovelady central office. In addition, the borrower plans to acquire the Kennard Telephone Co., furnishing magneto service through the Kennard exchange. A portion of the loan funds will be used to reimburse the borrower for the interim purchase of the Houston company properties.

The borrower's construction schedule includes new automatic central offices at Grapeland, Kennard, Lovelady, and in a newly created exchange at Austonio. A new building will also be erected in Crockett to house automatic office-commercial office-toll center facilities.

W. S. Bain is president and J. B. McDuff is manager of the Houston company.

•

Haviland (Kan.) Telephone Co.; $152,000; Jan. 27.

These funds will enable the borrower to improve service for 107 subscribers and to furnish initial service to 25 subscribers. As a nucleus for the new service, the borrower proposes to acquire and integrate the facilities of the Wilmore Telephone Exchange. This exchange now furnishes magneto service to 107 subscribers.

A new automatic central office is scheduled for construction at Wilmore. REA loans to this borrower now total $760,000 which will benefit 1,412 subscribers. The completed system will consist of seven exchanges. Six of them are in operation furnishing dial service to more than 1,100 subscribers.

Howard Ellis is both president and manager of the Haviland company.

•

Clarks (Neb.) Telephone Co.; $152,000; Jan. 27.

These funds will enable the company to improve service for 270 subscribers and to furnish initial service to 33 subscribers. As a nucleus for the new service, the borrower has recently acquired the Ulysses Telephone Co. now furnishing magneto service. It plans to rehabilitate and consolidate these facilities with its own system, and the loan reimburses the borrower for this acquisition.

A new automatic central office is scheduled for construction at Ulysses. Funds are also included in this loan to acquire a building in Clarks and to remodel it for headquarters to serve the whole system.

REA loans to the borrower total $316,000 which will benefit 650 subscribers. The system will consist of exchanges at Clarks and Ulysses.

Vinson A. Bittinger is president and manager of the Clarks company.

•

Arab (Ala.) Telephone Co.; $445,000; Jan. 30.

These funds will make it possible for the borrower to expand its present facilities to serve 1,868 new subscribers in its operating area.

REA loans to the Arab company now total $1,178,000 which will enable it to furnish new and improved service to 3,816 subscribers. The two exchanges of the system at Arab and Morgan are now providing dial service to over 2,000 subscribers.

L. McDonald is president and manager of the Arab company.

Need for Industry Alert

"What is there in this power situation that should receive the active attention of businessmen generally? Power is the energizing force of all industry. Control of this force by government operation affords a powerful entry by government into the remainder of the industrial activity of the country. Any act, therefore, on the part of business which condones expansion in the power field can well be an act which, in the end, will be inimicable to the business world, itself."—S. C. HOLLISTER, dean, Cornell University, College of Engineering.

ACME VISIBLE

P.B.X. KEYSHELF DIRECTORY UNITS

With direct distance dialing, it is essential for users of P.B.X. Boards to have a visible record of all frequently called numbers. Flexoline Keyshelf Directory units are specifically engineered and designed for use on P.B.X. boards and furnish the flexibility of individual Flexoline listings on the keyshelf.

The last Flexoline strip on the front of each frame is *visible* . . . listings may be added or changed without concern for label changing or other indexing detail.

Flexoline strips are furnished in sheets of 42 strips per sheet, pre-scored horizontally to the 1/6" standard typewriter space. Supply of Flexoline is included to completely establish the reference listings and accommodate listing changes.

Hardt Richard W LI 4-0002
Harris Maurice R TA 4-4343
Harris William T BA 4-2243
Harris Franklin HO 5-7910
Holme A Franklin JA 5-5353
Henderson Matthew KR 7-7158
Hill Denny W Rev LI 7-0618
Hodgman Stewart 1783
Hollowell W F O&E Engrg MA 7-3692
Holman Howard H ME 4-9650
Hough W G OR 3-1130
Hull James L EX 4-9006
Irlad Louis S Admin 6460
Isel George M RO 9-5422
Ingalls Bernard EX 2-6221
Inson Daniel H UN 4-1693
Insco W Edward TU 6-2351
Irvin J W EX 9-2198
Ives Thomas K AD 4-9113
Jackson Albert H WA 3-5056
Jackson Paul O LA 2-9809
Jacobs Wiley W AM 5-5943
Jaffe Louis I PE 3-6795
James Ernest L
James Leroy JE 3-1600
Jenkins Wright Wm CA 6-8150
Jergens Jack B DI 4-2158
Johns Nicholas 8430
Johnson C Lloyd O&E Plt EX 7-5973
Johnson Ralph V AD 2-2141
Johnson Wilson OD 4-8215
Johnson Melvin WA 3-3147
Jones Reginald TT 5-1375
Justis Marshall
Kaplan Milton H Pers Pet EX 5-1786 3159
Kennon B F RO 3-2440
King Robert F HU 4-3542
Kissell Vernon C RA 7-5650
Knight L Stanley WA 4-5906
Kyle John H
Lamb Donald F UN 3-7086
Lancdale Howard RO 2-9154
LaRue Ralph S TU 8-3254
Lawrence H Wesley EX 4-5491
Lester Robert B O&E Traf 7054
Little Clyde H UN 4-1154
Lowe Linwood L JE 5-6176
Luck Paul RA 5-7231
Lyon Franklin W LE 3-2695
Pollard Herman WA 8-4366
Richman Paul UN 6-0840
Usher Joseph A AD 7-6800

FOUR SIZES

7 frame units with 390 or 490 listings capacity
13 frame units with 700 or 890 listings capacity

Acme Visible Equipment is designed for the telephone industry by Systems Engineers in close cooperation with practical, experienced telephone experts. Tell us your needs and receive our suggestions and quotations.

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Please send us illustrated booklet of equipment specifically designed for Telephone Companies.

☐ **We are interested in Acme Visible equipment for** _____ (kind of record) **records.**

Check department: ☐ **Accounting** ☐ **Commercial** ☐ **Plant** ☐ **Traffic** T-2-14-59

☐ **Have representative call. Date** _____ **Time** _____

Company _____ **Attention** _____

Address _____

City _____ **Zone** _____ **State** _____

"AVERAGE REVENUE JUMPED 85% WITH AN ALCOA TANDEM BOOTH"

reports F. J. Eherenman of United Telephone Company of Indiana

"Early last year, we replaced an ordinary single booth with a new Alcoa tandem assembly and noticed an immediate increase in revenue," says F. J. Eherenman, General Commercial Supervisor of United Telephone Company of Indiana, Warsaw, Ind.

"We had noticed customers standing in line to use the single booth in front of our business office in Franklin and considered placing another booth along side it. But we decided to install an Alcoa® Aluminum tandem assembly for three big reasons: (1) aluminum's clean, good looks and solid construction blend well with our new, modern exchange building which just opened in January, (2) cost of painting every three or four years is eliminated, and (3) the tandem booth requires less space than two single booths, takes a minimum of sidewalk area.

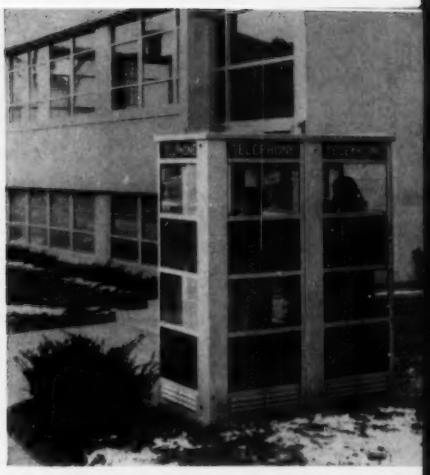
"In the first seven months of service the Alcoa tandem assembly has more than paid its way. Revenue has soared from the previous installation to an average increase of over 85 per cent. It's quite obvious that our customers also like Alcoa booths."

ALCOA GOODWILL KITS

Here's a big extra you get with every Alcoa booth. These FREE kits contain newspaper mats, publicity releases, envelope stuffers, radio and TV commercials—everything you need to tell customers about the added convenience of booths of Alcoa Aluminum.

For more information on Alcoa booths, write for brochure. And ask your jobber how Alcoa booths can increase your revenue and build customer goodwill. Aluminum Company of America, 1720-B Alcoa Building, Pittsburgh 19, Pennsylvania.

F. J. Eherenman, General Commercial Supervisor of United Telephone Company of Indiana, points to the two features of the Alcoa tandem assembly he likes best: the clean, bright appearance that attracts customers and the sleek, compact construction that blends well with the modern architecture of the new Franklin exchange building.



"Notice how neatly the Alcoa tandem booth fits into a minimum of space in front of our new building," says Mr. Eherenman. "Notice, too, how its clean, modern lines make it almost a part of the building because it blends so well with it."

"We erected our Alcoa tandem booth without difficulty," says Supervisor Eherenman. "Easy-to-follow assembly instructions came right with it, and two of our men had the whole job done in a few hours. The Alcoa tandem booth is more compact and has no hard-to-clean gap between the booths. It's strong, too, and both weather- and vandal-resistant."

Old Installation Single Booth	Revenue	New Installation Alcoa Tandem Assembly	Revenue
November, 1957	$ 92.75	March, 1958	$112.60
December, 1957	89.90	April, 1958	125.10
January, 1958	88.10	May, 1958	181.60
February, 1958	103.55	June, 1958	183.00
		July, 1958	174.25
		August, 1958	253.90
		September, 1958	199.30
		October, 1958	155.35

"It's easy to see how monthly revenue jumped immediately after the installation of the modern Alcoa tandem booth," reports Mr. Eherenman.

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

Your Guide to the Best in Aluminum Value

For Exciting Drama Watch "Alcoa Theatre," Alternate Mondays, **NBC-TV**, and "Alcoa Presents," Every Tuesday, **ABC-TV**

JOINT USE SAFETY CONSIDERATIONS

Concluded from page 24

and the other two involved 6,900-volt primary.

With a potential of 6,900 or 7,000 volts on a ground rod, one can not help but wonder about the potential gradient on the surface of the ground in the vicinity of such an energized grounding electrode. It is not hard to imagine that it might well be hazardous to walk in the immediate vicinity of such a setup. However, imagination is not a good tool with which to evaluate the element of hazard and we asked our laboratory people to make some tests.

Ground Surface Gradient Tests

Fig. 5 shows the results of these tests. They were made in wet soil using a five-foot ground rod energized to a potential of 100 volts, 60 cycles. A flat metal plate simulating the area of a man's foot was used for one set of curves. The other curves were obtained using a four-inch screwdriver and are shown merely for comparison. The solid lines show the voltage as measured with a high resistance voltmeter; the dashed lines show the voltage as measured with a 1,500-ohm shunt across the meter to simulate a man's body resistance. The same gradients will apply in dry soil, though the contact resistance to the man's feet will be higher.

Applying these results to the case of 6,900 volts on a grounding electrode, it seems obvious that the potential difference between points 1 foot and 3 feet from the ground rod would make for extremely hazardous walking in the vicinity. Note that 10 per cent of the applied voltage appears as a drop between these two points.

However, a review of our lost time and fatal electric shock accidents over the past 18 years failed to uncover any supporting evidence. Similarly, a review of several years' fatal accidents compiled by E.E.I. failed to reveal any fatal accidents from this source.

The effect of relatively high contact resistance between the ground and a man's feet and the different current paths may be a partial answer as to why there have been no fatalities from this source. A second factor is that a foot-to-foot path for electric current is generally recognized as being considerably less hazardous than hand to foot, head to foot, or hand-to-hand paths.

Before leaving the subject of energized grounding conductors, I'd like to touch briefly on two other varieties which have proven troublesome. The first seems to be traceable to poor engineering. This involved a three-phase experimental cable inserted into an open wire delta connected 2,400V distribution system. The cable was supported by a steel messenger which was grounded only by two ground rods—one at each end of the cable. Although a secondary ground was available at one pole, it was not used. Also, for some reason, the vertical grounding conductors at the two end poles were run without wood molding.

A faulty splice broke down and energized the messenger and the vertical grounding conductors. A telephone workman was killed when he contacted the grounding conductors. This points up a fact which most utility people know full well—i.e.; a single ground rod is rarely, if ever, an *effective* ground. There is no need, I'm sure, to belabor the point that in the absence of a connection to an effectively grounded conductor, the National Electrical Safety Code requires wood molding, or equivalent protection, over vertical grounding conductors—and with good reason.

The other type of grounding conductor which has shown up as a hazard is the grounding conductor from a lightning arrestor on a 550-volt dc feeder. This particular case should be properly charged to poor maintenance. It involved a faulty arrestor, *missing* wood molding, and an open vertical grounding conductor. A man was hurt when he accidentally touched it. Combination of circumstances seems to point the finger very definitely at maintenance.

Without wishing to take your time to urge the importance of adequate maintenance, I merely cite this case as one more reason for adequate maintenance. How many similar and worse conditions have been cleared or prevented by routine maintenance, I wouldn't know—although I'm sure the number would run into the thousands.

Reduce Future Accidents

There are several things which can be done to reduce the likelihood of future accidents stemming from energized grounding conductors. One is to bond these grounding conductors to telephone strand. Presumably as long as the bond is in place, it is well nigh impossible to maintain a hazardous difference of potential between these two kinds of plant.

Another method is to cover the grounding conductor with wood molding, and some utilities have been doing this. This is, of course, a more expensive method than bonding. Although there is some question as to the adequacy of wet wood as an insulator, we have yet to record a lost time electric shock accident involving an energized grounding conductor covered by wood molding.

A third method is to employ a somewhat different method of pole top wiring which would minimize the element of human error. Suppose all grounding connections from the transformer are run directly to the system neutral and the vertical grounding conductor is also run directly to the system neutral with no other power connections on it.

Past experience seems to suggest this is particularly applicable where double bushing transformers are concerned. I understand that most new transformers for multigrounded wye distribution service are of the single bushing variety. Yet, most likely, the economics of the situation would dictate that double bushing transformers remain in service for many years to come.

Distinctive Treatment of the Neutral

As shown in *Fig. 6*, if the connection between the transformer and the neutral is omitted, John Customer doesn't get any power and he'll certainly let you know about it in a hurry. However, the vertical grounding conductor is maintained at a safe potential with respect to local ground, unless of course, it has been erroneously connected to a phase wire. Here it would seem that a more distinctive treatment of the neutral, as oposed to phase conductors, might help.

In one case where we have the details, the neutral was on a white insulator, the phase conductors were on brown insulators on the same crossarm —yet the vertical grounding conductor was erroneously attached to a phase conductor. Perhaps a neutral attached directly to the surface of the pole would seem to be somewhat more obviously a neutral than a neutral on the same crossarm as phase conductors.

In conclusion, I would like to add one more thought. All the hazardous situations I have described were created by people—the accidents all happened to people. Any steps taken toward making jointly occupied poles safer from electric shock hazards must of necessity be done by people. Telephone people are ready and willing to do what they can towards greater safety on joint poles, and I'm sure power people are equally ready and willing.

What would you do with $15?

Reprinted from AT&T's January 1959 *Long Lines* Magazine.

IF SOMEONE should give you $15, what would you do with it? Buy a new dress? Fishing tackle? A steam iron? Or maybe you'd put it in the bank until you *really* needed it.

No matter what you had in mind, an extra $15 would come in mighty handy these days, wouldn't it?

Well, the Bell System had some 35 million customers in 1957, and each of them, on the average, "overpaid" his telephone bill by nearly $15—$14.76, to be exact. We're sure they all could have used that money in some other way.

Unfortunately, they can't get their $15 back. It was Federal excise tax money which the telephone companies had to collect as part of customers' telephone bills and pass along to Uncle Sam to help run the government.

We say they "overpaid" their bills because we don't think they should have had to pay any Federal excise tax. We think the tax is unfair and discriminatory and should be abolished.

The telephone excise tax cost our customers more than half a billion dollars in 1957. It is one of the most discriminatory of all taxes. Of the four household utilities—gas, water, electricity and telephone—only telephone service is subject to this tax.

During the past year or so, we'd hoped Congress would see our side of the story and act promptly to reduce or eliminate entirely the tax at its last session.

Nothing happened in Congress.

But here's what may happen this year:

A Joint Federal-State Action Committee is expected to recommend that part of the local telephone service tax be turned over to the individual states to pay for vocational education and waste treatment construction projects now supported by Federal grants. The Federal Government would relinquish its hold on 30 per cent of the present local telephone tax revenue in each state as fast as the state legislatures vote state levies in that amount. In addition, the lower income states would receive the revenue equivalent of 10 per cent of the local service tax. And at the end of a five-year period, the Federal tax on local service would be reduced from ten to six per cent.

This, we're certain, would freeze the local telephone excise tax into the tax structure forever, and kill all hope of ever doing away with it.

What can we do about it?

We can publicize this unfair tax from coast to coast, from border to border.

We can tell our story to everyone and anyone who has a stake in this matter.

We can talk to our friends and neighbors on the street where we live.

We can make sure that our state and national lawmakers understand our position and know the facts.

"Harry, this Strowger equipment is really built!"

A lot of far-sighted telephone men visit Strowger exchanges these days.

And then they decide to buy Strowger Automatic.

The moment you see your first spanking-new Strowger exchange, you'll understand why. There's an impressive solidity about it that says *quality* — forcefully, undeniably. There's a smooth precision to its operation that assures fine service and less maintenance.

Visit a Strowger exchange yourself. Then get in touch with us. We'll be happy to help you in any way we can. Address:

Automatic Electric Sales Corporation,
Northlake, Illinois
Or call FIllmore 5-7111

AUTOMATIC ELECTRIC

Subsidiary of **GENERAL TELEPHONE**

CABLE CONDUCTIVITY

Concluded from page 33

(3) In these spaces will be found the required multiplying factor: For the "22 SIZE CABLE" it is 1.0; for the "24 SIZE CABLE" it is 1.6; and for the "26 SIZE CABLE" it is 2.5. Then

No. 22-gauge cable is 1.0 × 14,796 = 14,796 actual feet.
No. 24-gauge cable is 1.6 × 8,942 = 14,307 equivalent feet.
No. 26-gauge cable is 2.5 × 5,638 = 14,095 equivalent feet.
Total = 43,198 equivalent feet of 22-gauge cable.

(4) The loop resistance of the combination is R = KL ÷ CM × 2, or 10.4 × 43198 ÷ 642 = 700 × 2 = 1400 ohms.

(5) 1400 ÷ 4 = 350.

(6) 350 ÷ 592 = 0.59 pair as before.

Inasmuch as the coin box relay is operated from the tip side of the pay-station line to ground, and the line must be full metallic for telephonic transmission, both the tip and ring side of the line are involved, therefore, 4 × 0.59 = 2.4 cable pairs are required. However, in actual practice two cable pairs connected as shown in *Fig. 4*, are sufficient to provide the necessary conductivity.

Special Offer

We have a limited supply of the popular book "Cable—Modern Methods of Fault Location, Installation and Splicing," By Daniel S. Seitz, which we are offering at 40 per cent off of the regular prices.

This book of 80 pages—8½ inches by 11 inches—contains a reprint of 19 installments of an article entitled "Cable Splicing," by Mr. Seitz, published in TELEPHONY. It covers (1) the history of the development of cable; (2) composition and manufacture of cable; (3) methods of installing aerial, underground and building cable; (4) techniques and detailed instructions for splicing cable; (5) methods of locating and clearing cable faults; (6) instructions for pressure testing of cable.

It is an ideal book for regular cable splicers and their helpers, as well as a practical aid for employe training courses.

The new low price schedule for this book is as follows:

1 to 5 copies	**$1.00 each**
6 to 25 copies	**$ .85 each**
26 to 50 copies	**$ .70 each**
Over 50 copies	**$ .50 each**

Order your copies on the coupon below.

TELEPHONY Publishing Corp., 608 S. Dearborn St., Chicago 5, Ill.

Enclosed is check for $_____ to cover my order for the Seitz cable book, as follows:

_____ copies at $1.00 each

_____ copies at $ .85 each

_____ copies at $ .70 each

_____ copies at $ .50 each

Name_____

Address_____ City_____

ORGANIZATIONAL CHARTS

Concluded from page 20

tom of the organization is not the place to begin."

While we didn't experience too much difficulty with the hourly employes, we began running into a great amount of trouble at the first supervisory level. Very little information could be obtained regarding specific responsibility, authority, or objectives, primarily because similar data were just as unclear at the next higher level of management. The net result was some very (if you will pardon the expression) "outlinish" outlines.

Change of Approach

After considerable evaluation and discussion (and a few necessary policy decisions regarding responsibilities and authority), we decided to change our approach and start at the department head level and work our way down.

This, we felt, would enable us to get a concentrated picture of the over-all authority and responsibility of the department head, and facilitate our tracing it down through the various section heads and supervisors. This eventually proved to be the sounder approach.

The first draft of the job specification is usually made by the responsible department or section head, following which a redraft is made in cooperation with a designated staff executive in order to obtain as objective an approach as possible.

This second draft will usually result in a greatly expanded outline, and the elimination of conflicting duties and responsibilities previously assigned to other positions or jobs. Another review involving much discussion of the proper use of "words" and "verbs" usually ensues before a final job specification is obtained.

Final Approval

The completed specification, or groups of specifications, are then submitted to our executive committee for final review and approval. The executive committee approval is considered of paramount importance, as it provides the necessary stamp of acceptance which lends to the effectiveness of the adopted specifications and insures compliance by all personnel.

I would like to re-emphasize once again that the development of good job specifications is a time consuming task, and one which requires much understanding and patience on the part of those directly responsible for their preparation. However, the changes and improvements which will result both during and after their development will make the time spent most profitable.

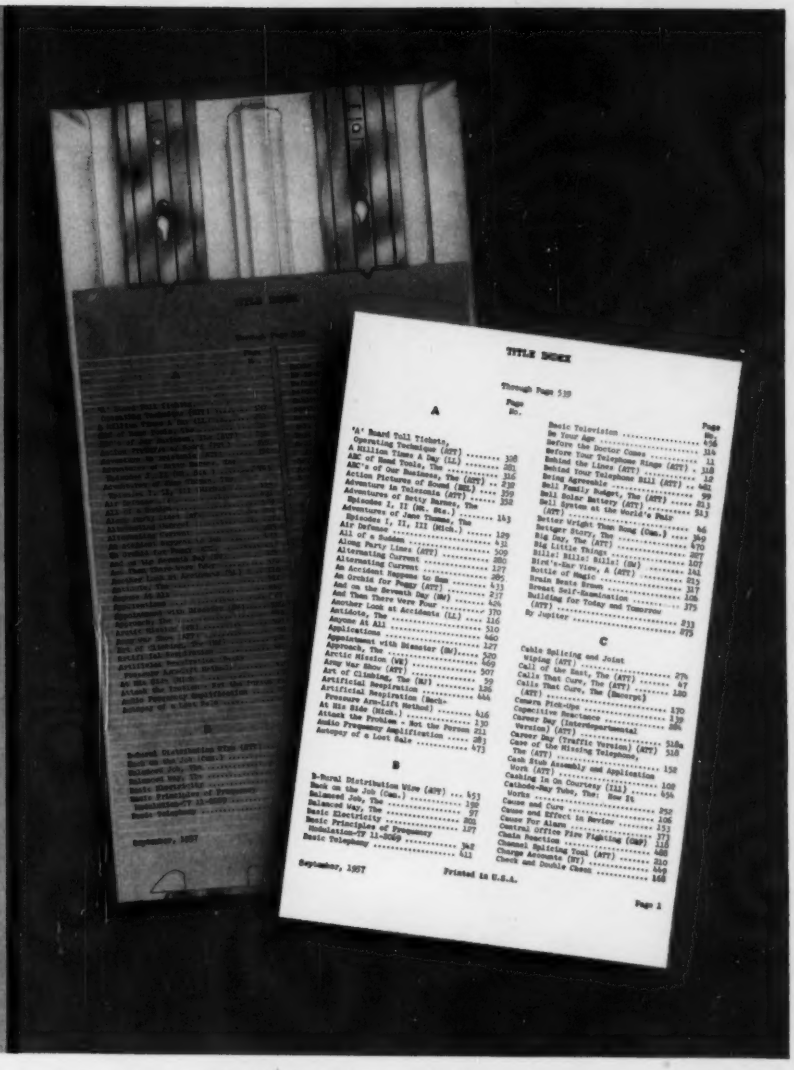
More important, much progress will have been made toward the development of a sound organization plan.

Restoring Rewards

"Instead of thinking up new 'free rides' for the indolent at the expense of the thrifty, the time may indeed be here for restoring the rewards and incentives intended under the American competitive system based on individual merit. This could be implemented by increasing the 'take-home' pay of productive, self-supporting citizens by reducing their tax liabilities to government."—M. S. RUKEYSER, *columnist.*

Which of these Catalogs do you issue?

- ☐ Form Catalog
- ☐ Standards Catalog
- ☐ Supply Catalog
- ☐ Film Catalog
- ☐ Directories (Internal)
- ☐ Trademark Catalog
- ☐ Stationery Stock Catalog
- ☐ Organization Charts



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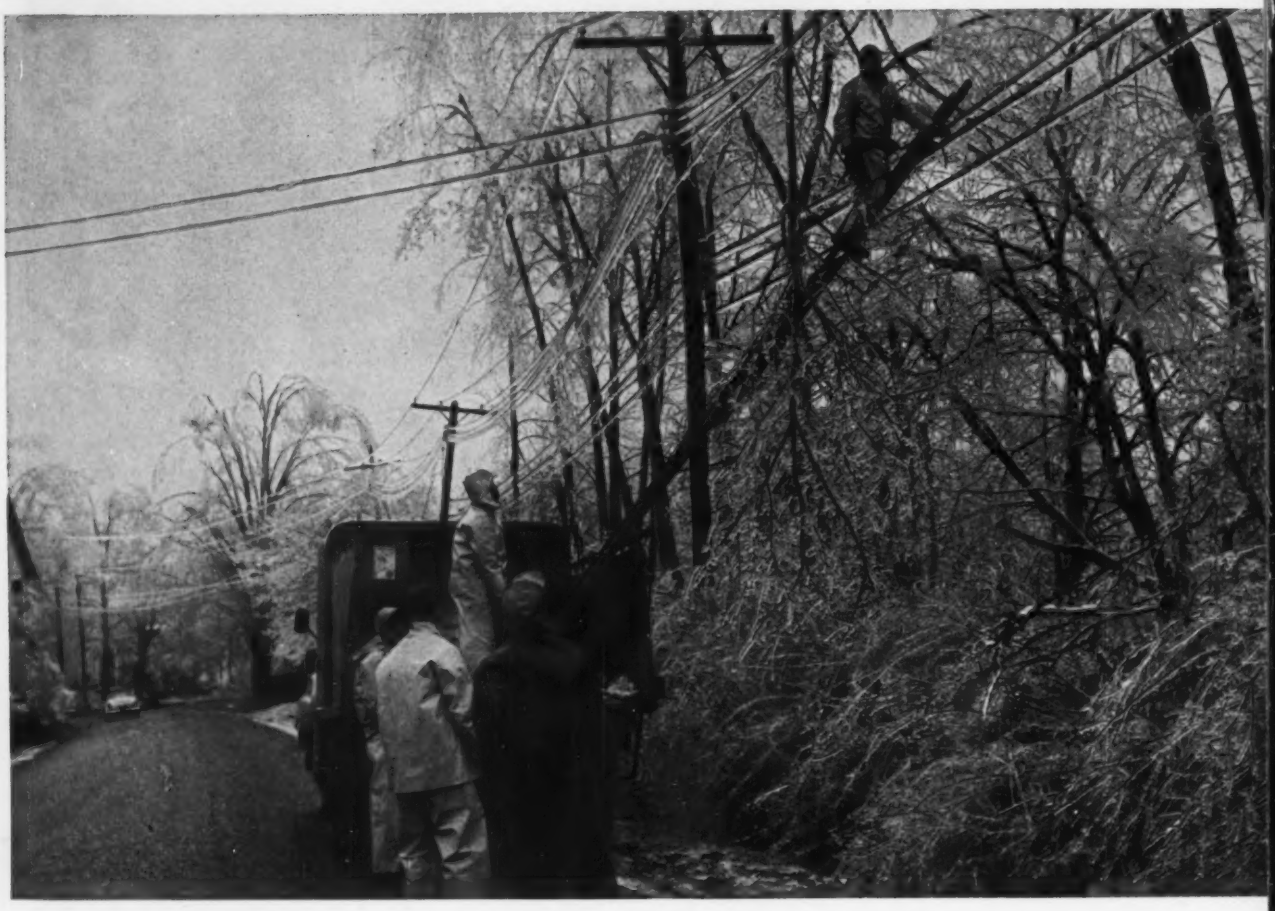
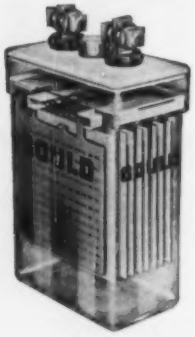
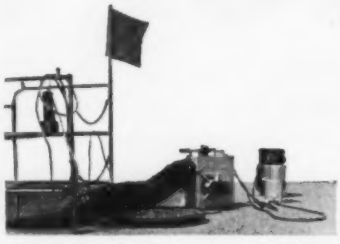
Kellogg rescues ice-struck





Outstanding Battery Performance is yours when you choose Gould Plante Batteries. Thick, grooved, pure lead positive plates give many years of trouble-free service! Made by GOULD-NATIONAL BATTERIES, INC., the finest money can buy.



MoPeCo Model PE-G Ventilating Heater and Attached Generator—An aid to safe utility, construction and maintenance. Clears manholes of explosive gases, as well as furnishing an ample supply of fresh, heated air for all underground work. Portable, weighs only 78 pounds, with attached 300 watt DC generator providing current for a drop cord and electric light.
MORRISON-PELSUE COMPANY

Longer spans, lower costs. Crapo HTL-195, the new extra high tensile, lower resistance telephone line wire makes possible up to 40% reduction in pole structures with marked savings in construction costs. Developed and manufactured by INDIANA STEEL & WIRE COMPANY, INC.

independents

Ice-laden wires spell trouble for telephone men. Kellogg can't make the work any easier, but Kellogg can simplify your repair and supply problems when such emergencies strike.

At all eight strategically-located Kellogg warehouses you'll find complete stocks of more than 12,000 vital items waiting for just such crises as faced Newton, New Jersey, after a severe ice storm. These close-at-hand facilities do much to alleviate subscriber inconvenience, hold it to a minimum, and allow repairs to proceed quickly.

Whether or not your needs are brought on by an emergency, you'll find Kellogg a good place to do business. The experience gathered in more than 60 years of association with independent telephony is always at your service. And you have the added assurance that everything you buy from Kellogg is backed both by Kellogg and the world-wide resources of International Telephone and Telegraph Corporation.

KELLOGG Communications Division of ITT
CHICAGO, ILLINOIS

Kellogg Switchboard and Supply Company, 6650 South Cicero Avenue, Chicago 38, Illinois
Communications Division of International Telephone and Telegraph Corporation.

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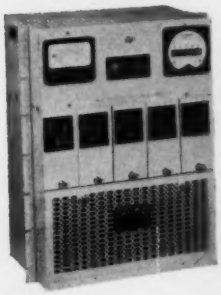
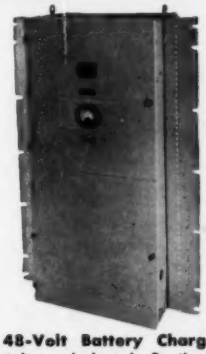
ILLINOIS: 4600 So. Tripp Ave., Chicago 32, Illinois, CLiffside 4-4300. TWX CG 3296
KANSAS: 7th & Sunshine Road, Kansas City 15, Kansas, MAyfair 1-4418. TWX KC KAN 1055
MINNESOTA: 6100 Excelsior Blvd., Minneapolis 16, Minn., West 9-6715. TWX MP 1195
NEW YORK: 327 North West Street, Syracuse, N. Y., HArrison 2-9251.
OHIO: 1555 West Fourth Street, Mansfield, Ohio, LAfayette 4-6511. TWX MANS O 132
TEXAS: 1515 Turtle Creek Blvd., Dallas 7, Texas, RIverside 7-5191. TWX DL 02
EXPORT: 157 Prospect Street, Passaic, N. J., PRescott 3-5100.

Cook Hi-Fi Loading Coils—reduce attenuation, combat frequency distortion and avoid cross talk on existing lines. These coils save installation costs by permitting use of smaller gauge line wire. COOK ELECTRIC COMPANY.

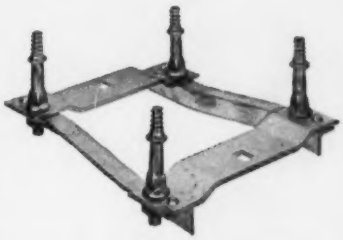


Transistor Sub-Cycle—Operates directly from 50-volt exchange battery for regular or stand-by service. No expendable or moving parts—Stabilized ringing frequencies—Regulated ringing voltages—Sine wave output—Capacity 0.200 amp per ringing frequency—Available for Harmonic, Synchromonic, and Decimonic Ringing. LORAIN PRODUCTS CORPORATION.

Patented method of interspersing abrasive particles throughout the inner surfaces of Reliable Squeez Sleeves ensures holding ability and high electrical efficiency. Made of alloy steel with combinations of standard die grooves, they operate efficiently and provide long life without adjustment. RELIABLE ELECTRIC COMPANY.



New 48-Volt Battery Charger Line. Completely redesigned Raytheon Recti-Chargers (R) feature no load to full load regulation of ±1%, no tubes, automatic compensation for rectifier aging, no audible hum. Most compact units on the market—single and three phase, output from 30 to 400 amperes. RAYTHEON MANUFACTURING COMPANY.

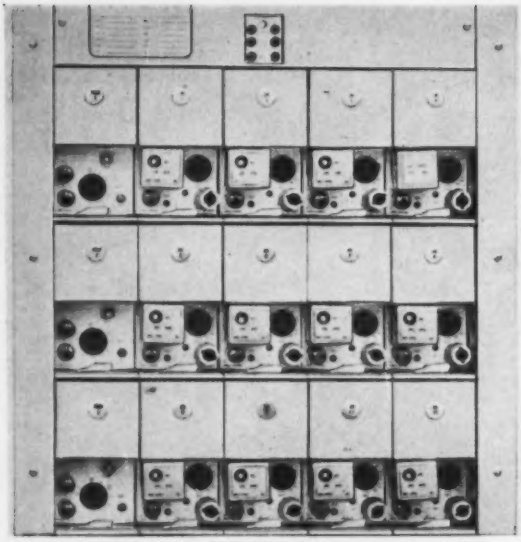


REINFORCED HEAVY DUTY 4-POINT TRANSPOSITION BRACKET—Joslyn J8130K and J8132K Transposition Brackets are for 10" and 12" wire spacings respectively, left-over-right transposition and are approved by REA as Item P-mc. These Brackets are designed to take #H-23 Glass Insulators fitted with J7084 Plastic Bushings. JOSLYN MFG. & SUPPLY CO.

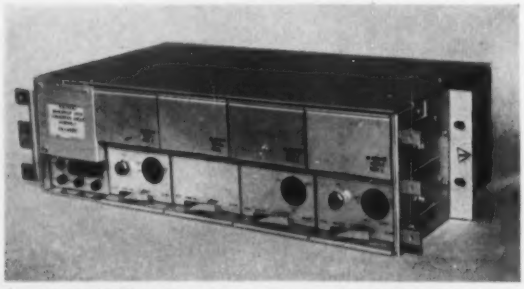
Cut yourself in on

with LENKURT Carrier for microwave

...direct interconnection



Typical Lenkurt 45-Class Basegroup Channel Bank provides channelizing and grouping equipment for 12 voice channels, yet occupies only 22¾ inches of vertical rack space. Type 45C Carrier provides for economical expansion in 4-channel groups by the simple addition of interchangeable plug-in units.



Lenkurt Basegroup Transfer-Converter permits transfer of 12-channel groups between Lenkurt 45-Class systems and Western Electric J, K, L, or CCITT conforming systems. It eliminates expense of extra channelizing equipment—permits different carrier systems to be connected in tandem without demodulating the individual carrier channels to voice frequency.

Toll business is growing at an almost incredible rate—but nothing like what can be expected as nationwide toll dialing is achieved. Are you preparing to get your full share of these mounting toll dollars?

If not, we suggest it's time to get started. Let Automatic Electric engineers help you develop your toll circuits with universally accepted Lenkurt Carrier and Microwave equipment.

Universal 45-Class Carrier

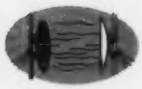
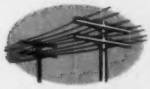
Lenkurt Carrier is the simplest, fastest, most economical way to add new circuits. Lenkurt's famous 45-class Carrier systems—for open wire, cable and microwave—offer the unique advantage of *direct interconnection at carrier frequencies*. Thus, your entire carrier network can be completely coordinated! No need for expensive back-to-back equipment to convert carrier to voice frequencies, and then back to carrier. Maintenance is simpler—distortion reduced—performance improved. Think what it means in savings to you!

New Lenkurt Microtel Type 74A

Lenkurt's new Type 74A Microtel for the 6000 mc band is the latest, most advanced microwave equipment on the market. Utilizing miniaturized plug-in components similar to those in Lenkurt 45-class Carrier equipment, it offers extreme flexibility—meets expansion needs from as few as four channels to high-density intercity systems.

Automatic Electric offers you Lenkurt Carrier and Microtel in a complete package—*engineered, furnished and installed*. If you want, we'll do the surveying—erect microwave towers—take complete responsibility for a "turn-key" installation, including on-the-job and factory training of your people. May we send you more information?

toll revenues!

 open wire  or cable

at carrier frequencies!

Lenkurt Microtel Type 74A takes less floor space—requires smaller antennas—uses fewer tubes—consumes less power! A single terminal can accommodate 4 to 240 channels; system can be expanded to 960 voice channels, plus 64 supervisory, remote-control or telemetering channels, *without additional antenna equipment.*

Rigid Quality Control—Three of more than 150 quality control stations at the Lenkurt Factory. These stations perform a 100% inspection of master oscillator units, regulators and power supplies for 45-Class Carrier systems. Highest standards of precision manufacture and inspection at every step mean lowest costs over the years.

Automatic Electric Sales Corporation
Northlake, Illinois

I would like more information on Lenkurt Carrier ☐
Microtel ☐ *Please have your representative call* ☐

NAME..... TITLE.....

COMPANY.....

ADDRESS.....

CITY..... ZONE..... STATE.....

AUTOMATIC ELECTRIC

Subsidiary of **GENERAL TELEPHONE**

Courts and Commissions

Grant 2 Increases; Note, Sale OK's; Ask Raise in Neb.

The Plainview Telephone Co. was given permission to increase rates and charges effective Jan. 1 by the Nebraska Railway Commission. The company serves 700 company subscribers and 260 service stations.

Rates approved are as follows:

	Old	*New*
One-party business	$5.50	$6.50
One-party residence	3.00	3.50
Two-party residence	2.75	3.00
Rural (metallic)	2.50	3.00
Rural (grounded)	2.00	2.50
Service station	1.00	1.25

The new rates will produce $5,019 in additional annual revenue but expenses are expected to increase to $5,378 which will result in a decline in net income of $359.

•

The commission also granted rate increases and authority to secure a loan of $45,000 to the Maywood Telephone Co., Inc. on Jan. 6.

The company serves 161 company-owned stations and 82 switching stations at Maywood and proposes to convert the exchange to automatic operation. Extended area service will be continued between Maywood and the Curtis exchange of the Curtis Telephone Co. An additional 15 cents per month per station for such service was denied.

The following interim rates, effective Feb. 1, and dial rates effective after conversion were approved:

	Interim	*Automatic*
One-party business	$4.75	$7.50
One-party residence	3.50	5.00
Four-party residence	3.00	4.00
Rural residence	—	5.00
Multi-party residence	3.50	—
Service station	.85	2.00

Dial service rates will produce a rate of return of 6.34 per cent on a net plant rate base of $62,102.98.

On the same date, the commission authorized the company to borrow $45,000 from the Stromberg-Carlson Co. and to issue interim demand notes secured by a mortgage on the company's property and bearing interest at 5½ per cent per annum.

Interim notes will be replaced with one final note, after the conversion, to be paid in 240 consecutive monthly installments with interest on the decreasing balance at 6 per cent.

•

Also in Nebraska, Chrisp's Telephone Exchange, Paxton, was given authority on Jan. 13 to acquire the properties of the Wallace Telephone Exchange. For this purpose, the commission approved the sale of 105 shares of 6 per cent cumulative preferred stock and preemptive rights for the present holders of preferred stock.

The company's articles of incorporation provide for authorized capital of $100,000 evidenced by 850 shares of common stock, par value $100 per share, and 150 shares of 6 per cent cumulative preferred stock, par value $100 per share. At present, 600 shares of common and 45 shares of preferred stock are issued and outstanding at $64,500.

•

On Feb. 4, the commission was to have heard a rate increase application by the Dalton Telephone Co.

Northern Illinois Company Asks Rate Increase

The Northern Illinois Telephone Co., Lanark, on Jan. 20, petitioned the Illinois Commerce Commission to raise its rates by a total of $95,000 a year effective Feb. 16.

Eleven communities would be affected by the increase, namely: Creston, Winslow, Davis, Durand, Forreston, German Valley, Seward, Brookville, Lanark, Pecatonica, and Shannon.

Open Rate Hearings in O.

Hearings before the Ohio Public Utilities Commission on the application of the Ohio Telephone Service Co., Sidney, for a rate increase are scheduled to open on Feb. 24.

Georgia REA Borrower Granted Raised Rates

The Georgia Public Service Commission has ordered that, effective Feb. 1, the Cherokee Telephone Co., Rochelle, apply a new schedule of increased rates for its Pineview, Pitts, Rebecca and Rochelle exchanges.

The company stated that the old rates were not adequate to meet operating expenses, nor interest on its $497,000 REA loan.

Testimony by interested parties brought out the fact that population in the areas served by the company is steadily decreasing due to the trend of residents moving from farms to the city. Thus actual telephone development has fallen short of projected figures, and, the commission observed, "the evidence seems to indicate that the telephone system of the company is presently overbuilt." Therefore, the commission refused the Cherokee company's request for approval of an additional REA loan.

Following are the schedules of old and new rates:

	Old	*New*
One-party business	$6.00	$6.50
Two-party business	5.00	5.50
Four-party business	4.00	4.50
One-party residence	3.75	4.00
Two-party residence	3.25	3.50
Four-party residence	2.75	3.00
Rural multi-party business	4.75	5.00
Rural multi-party residence	3.75	4.00

OK Dial Rates Immediately, Suspend Rest in Pa.

The Pennsylvania Public Utility Commission on Jan. 20 approved, effective immediately, higher rates for the 47,126 subscribers of the United Telephone Co. of Pennsylvania, Harrisburg, who have dial service (TELEPHONY, Dec. 13).

The part of the total $805,000 increase which would affect about 32,160 subscribers still without dial service was suspended to July 20. These subscribers are not expected to have dial telephones before 1960.

The commission said its aim was to find out whether an immediate increase in non-automatic exchange rates would be discriminatory.

Rule Individual Can't Ask Arbitration Review in Wis.

An individual worker has no right to ask for court review of a legal decision in a case between his union and his employer even though his own job is at stake, the Wisconsin Supreme Court ruled unanimously on Feb. 3 (TELEPHONY, Dec. 14, 1957).

The effect of the decision was that John A. Dressler, former Wisconsin Telephone Co. employe, stays fired. He was dismissed from his post as PBX installer in 1956, after being denied security clearance by the U.S. Department of Defense.

The government, it was reported, said Dressler was a member of the Socialist Workers party, a Trotskyite group. Mr. Dressler denied it.

When Mr. Dressler was discharged, his union, the Communication Workers of America, charged an unfair labor practice and asked arbitration. The company refused. The CWA complained to the Wisconsin Employment Relations Board, but dropped its complaint after it received information that a similar case had been decided. The earlier finding gave the company the right to discharge a man on security grounds, the board said. It dismissed the complaint.

Dressler petitioned for review of that dismissal, acting on his own behalf as an individual.

The court opinion, written by Justice William Dietrich, said in part:

"Dressler was a member of the Communication Workers of America. The union was selected as his collective bargaining representative. The union entered into a contract with the Wisconsin Telephone Co. The dispute arose between the union and the company.

"Dressler, as an individual, was not a party to the contract. . . .

"We hold that Dressler, the employe, was not a party to the collective bargaining agreement and he was not a party to the arbitration proceedings instituted by the union against the employer. Therefore he was not entitled to review of the decision of the arbitration board."

Minn. Independent Gets Increase; Offers EAS

The Pioneer Telephone Co. of Carver County, Norwood, on Jan. 26 was granted an increase in rates for its Norwood exchange by the Minnesota Railroad & Warehouse Commission.

The Pioneer company recently purchased the Hamburg exchange from the Tri-County Cooperative Telephone Co. and will serve these Hamburg sub-

CONDEX MULTIPLE CONCRETE CONDUIT

SPOTTING OF CONDUIT ALONG RIGHT-OF-WAY ADJACENT TO PROPOSED TRENCH

NOW AVAILABLE IN ALL THESE SIZES: 2, 4, 6, 8 and 9 DUCT

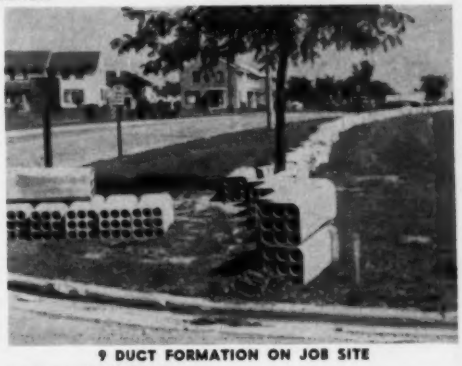
Special fittings—miters—short lengths—expanded web sections available, also adapters to claytile, transite and fiber duct.

CONVENIENT

Delivery can be made to jobsite on 24 hours notice. Condex may be installed in any weather, even in trenches holding water. Ditches can be covered as soon as installation is made. Due to low breakage factor, jobs can be estimated more accurately.

STRONG

Pittsburgh Testing Laboratory tests show: compressing strengths of 10,000 lbs. PSI; water absorption of 3.9%; load test-failure at 74,000 lbs. From a telephone company report on Condex multiple-duct concrete conduit—"it is obvious that no trouble was experienced in cable placing operations, no evidence of excessive abrasion on the lead sheath." Smooth bore is obtained by mechanical honing.



9 DUCT FORMATION ON JOB SITE

ECONOMICAL

Multiple-Duct Concrete Conduit is manufactured with a bell-end joint, eliminating the use of plastic or mortar bandages with dowel pins, for joining. A joint sealing compound, applied with a pressure gun, is all that is needed and cost of this joining operation is less than 3½c per trench foot for both material and labor.

Single crews have installed 1,600 to 1,800 trench feet of conduit per 8 hour day, with two to three less men than with other types which require mortar bandage joints.

Breakage factor of concrete conduit is less than 1%, due to strength of product.

FOR FULL INFORMATION—CALL OR WRITE YOUR LOCAL LICENSEE, OR THE PARENT COMPANY

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Illinois 7-1515

CHICAGO PRE-CAST PRODUCTS CORP.
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Franklin Park, Illinois
Gladstone 5-8116

UTAH CONCRETE PIPE CO.
379—17th Street
Ogden, Utah
Export 2-7513

ELMORE CONCRETE PRODUCTS CO.
Div. of North Star Concrete Co.
Elmore, Minnesota
Elmore 52

EMPIRE CONDEX, INC.
6700 Mad River Road
Dayton, Ohio
Tuxedo 5-7051

WESTERN CONCRETE PIPE CO.
3501 Power Inn Road
Sacramento 19, California
Hunter 6-0026

T. E. L. PRE-CAST PRODUCTS CORP.
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HOOPER CONCRETE PIPE CO.
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Phoenix, Arizona
AL 2-7566

PRE-CON LTD.
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Orenda Road
Brampton, Ontario
Canada
HU 1-3492

CONDEX
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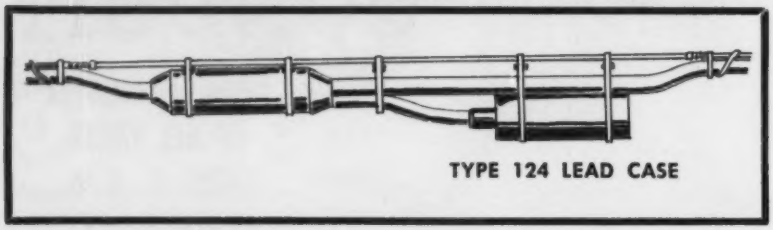
CEECO LOADING COILS

IN CUSTOM MADE LEAD OR STEEL CASES
FOR USE ON LEAD OR PLASTIC CABLES

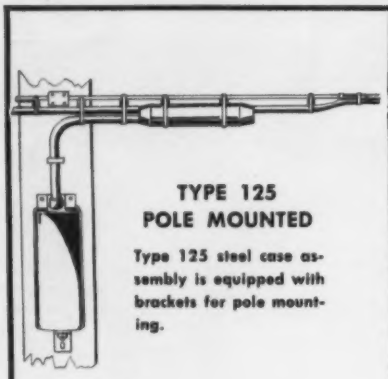
TYPE 124 LEAD CASE FOR AERIAL MOUNTING



TYPE 124 LEAD CASE

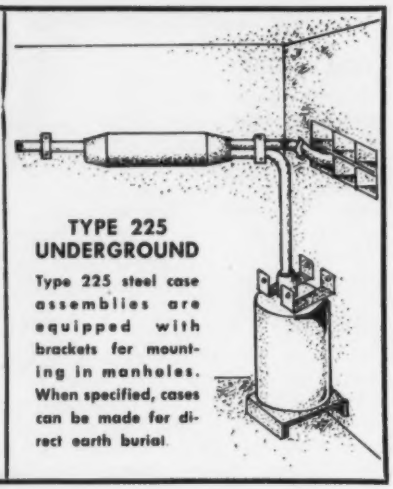
STEEL CASE ASSEMBLIES

- ALL LEAD STUB ASSEMBLIES ARE PRESSURIZED
- ALL PLASTIC STUB ASSEMBLIES ARE HERMETICALLY SEALED



TYPE 125
POLE MOUNTED

Type 125 steel case assembly is equipped with brackets for pole mounting.



TYPE 225
UNDERGROUND

Type 225 steel case assemblies are equipped with brackets for mounting in manholes. When specified, cases can be made for direct earth burial.

Voice frequency coils, type 632(88MH) and 638(44MH) are primarily designed for use on two wire telephone cables. Types MF10, MF11, 641 and 642 coils are furnished for quadded interoffice and toll cables. Special coils can be made to meet other requirements.

WRITE US FOR ASSISTANCE
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CEECO LOADING COILS are sold by your Telephone Equipment Supplier

COMMUNICATION EQUIPMENT & ENGINEERING COMPANY
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Phone EStebrook 8-3109

scribers from its Norwood and Plato exchanges. Extended area service (EAS) will be offered between Norwood and Plato and the Norwood exchange will be modified to the 2-5 numbering system.

The facilities added to plant will mean a total net plant gain of $71,000 to the rate base of $868,035 previously determined by the commission. The new (current value) rate base after all adjustments was set at $939,943.

The company was allowed to increase its revenues from $202,275 to $213,386. This raises net income from $54,426 to $57,143, increasing the company's rate of return of 5.14 per cent to 6.08 per cent.

Old and new rates at the Norwood exchange are as follows:

	Old	*New*
One-party business	$7.25	$7.75
Two-party business	6.25	6.75
Ten-party rural business	4.95	5.25
Combination business and residence	10.15	10.95
One-party residence	4.15	4.45
Two-party residence	——	3.85
Four-party residence	3.15	3.25
Ten-party rural residence	3.95	4.15

Old and new rates for the "Hamburg" area are as follows:

One-party business	5.75	7.75
Two-party business	5.25	6.75
Multi-party rural business	5.25	——
Ten-party rural business	——	5.25
Combination business and residence	——	10.95
One-party residence	4.50	4.65
Two-party residence	4.25	——
Four-party residence	4.00	3.45
Multi-party rural residence	4.75	——
Ten-party rural residence	——	4.15

A discount of 25 cents is allowed if bills are paid on or before 15 days after the date of the bill.

General of Neb. Asks Bond, Gets Stock, Service OK's

The Nebraska Railway Commission on Jan. 27 was to have heard the application of the General Telephone Co. of Nebraska for authority to sell 1.1 million dollars worth of 30-year bonds.

The commission on Jan. 8 also authorized General of Nebraska to issue and sell 34,000 shares of common stock at $25.00 per share for a total of $850,000. The entire issue will be sold to the General Telephone Corp. Proceeds will be used to retire temporary bank loans.

The order also increased the authorized shares of common stock for the company from 80,000 to 120,000 with a par value of $25.00. This increases the authorized capital of the company from 3 million dollars to 4 million dollars.

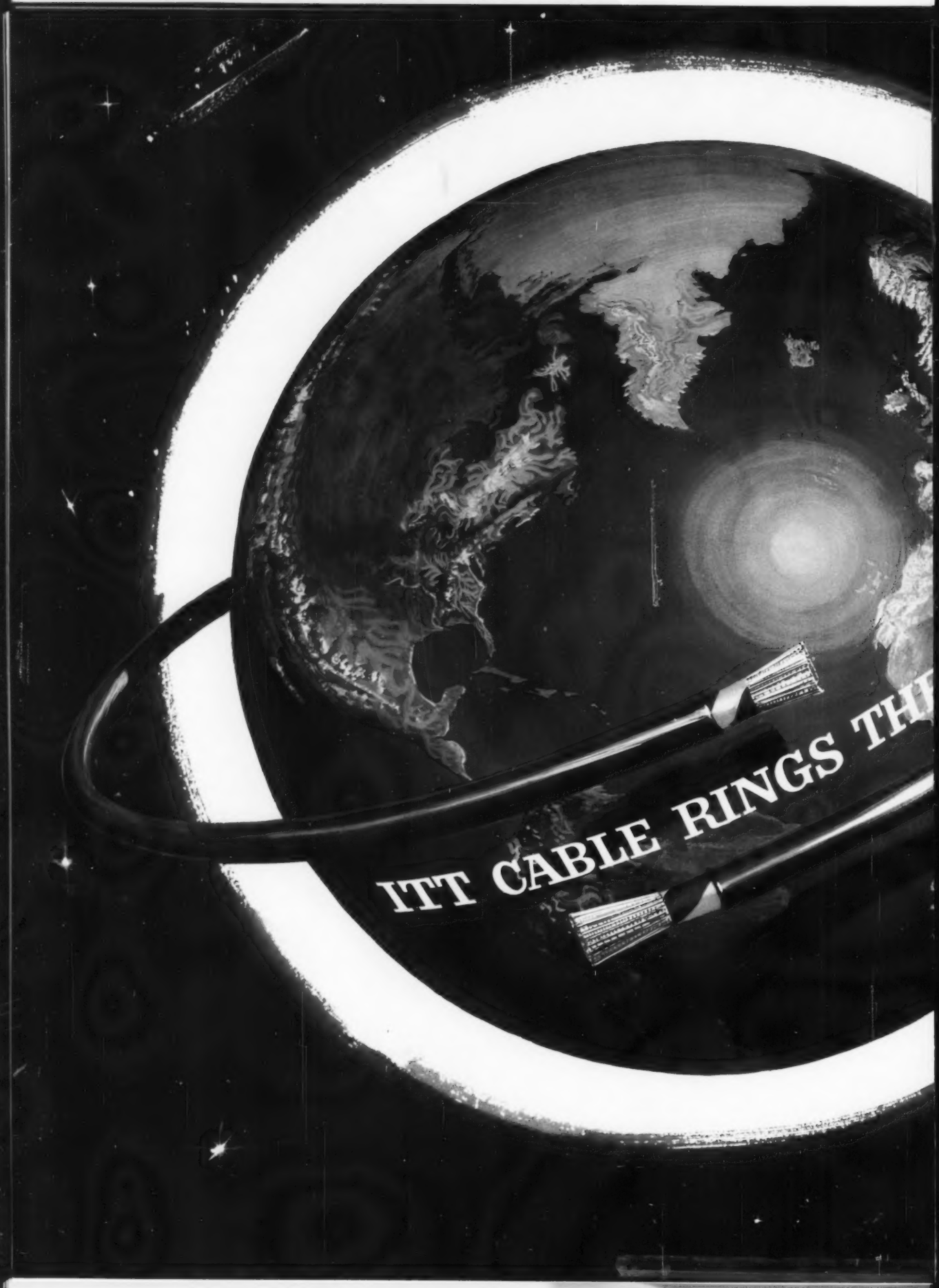
In the past three years, the General

(Please turn to page 57)

Another quality product from

KELLOGG...

ITT CABLE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ITT CABLE

Available to all independents

ITT Cable, long in use throughout the United States, is available to all independent telephone companies.

ITT Cable exceeds every exacting standard of telephony, it features unit and layer construction. The copper conductor and paper insulation is furnished by the largest U. S. supplier of these commodities. ITT Cable (aerial or direct burial) is available in all gauges—19, 22, 24 and 26. All reels are disposable to eliminate additional costs involved in returns.

Backed by both Kellogg and the world-wide facilities of International Telephone and Telegraph Corporation, you will find this cable exceeds the high standards of modern communications.

Ask your Kellogg Regional Office for complete information.

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CHICAGO, ILLINOIS
Communications Division of ITT

8 billion conductor feet in USE in U.S.A.

SERVING THE LARGEST SINGLE TELEPHONE SYSTEM!

ITT Cable Is Strategically Stocked At 4 KELLOGG Warehouses

* Major customers are maintained at four strategic warehouses in New York, Chicago, Kansas City (Kan.), and Burlingame, Calif., to guarantee fastest service and prompt delivery.

Regional Offices and Warehouses:
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GEORGIA: 1594 Southland Circle, N.W., Atlanta 18, Ga., SYcamore 4-2441. TWX AT 351
ILLINOIS: 4500 So. Tripp Ave., Chicago 32, Illinois, CLiffside 4-4300. TWX CG 3296
KANSAS: 7th & Sunshine Road, Kansas City 15, Kansas, MAyfair 1-4418. TWX KC KAN 1055
NEW YORK: 327 North West Street, Syracuse, N. Y., HArrison 2-0251.
OHIO: 1555 West Fourth Street, Mansfield, Ohio, LAfayette 4-6511. TWX MANS O 132
TEXAS: 1515 Turtle Creek Blvd., Dallas 7, Texas, RIverside 7-5191. TWX DL 02
EXPORT: 157 Prospect Street, Passaic, N. J., PRescott 3-5100.

KELLOGG Communications Division of ITT
CHICAGO, ILLINOIS

†Licensed under patents of American Telephone and Telegraph Company and Western Electric Company, Incorporated

Kellogg Switchboard and Supply Company, 6650 South Cicero Avenue, Chicago 38, Illinois
Communications Division of International Telephone and Telegraph Corporation.

Basic Specifications		26 AWG	24 AWG	22 AWG	19 AWG
Sheath: lead with 1% antimony					
Conductor: pure copper wire					
Conductor Resistance max. ohms/mile @ 20°C.		230	145	92	46
Mutual Capacitance 900 cycles A.C., mfd/mile, max.		0.080	0.080	0.090	0.084
Capacitance Unbalance 900 cycles A.C., micro-microfarads		*	*	at 22 AWG: up to 1000′—100; 1001′ to 2000′—150; 2001′ and longer—200 at 19 AWG: up to 1000′—100; 1001′ to 2000′—150; 2001′ and longer—200	
Dielectric Strength: 60 cycles A.C., for 2 sec., volts rms	conductor-to-conductor-to-sheath	355	355	355	500
	core-to-sheath	850	1000	1000	1000

Insulation Resistance: not less than 1,000 megohm-miles at 60°F measured with a D.C. potential of 100 to 550 volts.

*not required, except if adjacent pairs are found with like lengths of twist when the 900 cycle A.C. capacitance unbalance shall not exceed 400 micro-microfarads.

Telephone cables have been manufactured by the ITT System for many decades and are backed by the world-wide research facilities of the ITT. This wealth of know-how and skill assures a product of the highest quality, yet at prices competitive with those of other leading cable suppliers. In the U. S. alone, over 8 billion conductor feet of telephone cables of all types have been sold to the telephone industry and are in service in every part of the nation.

The manufacture of telephone cable begins with selection of quality copper which is drawn to the proper wire size for use as telephone conductors. Kellogg cable employs the highest purity U. S.-mined and U. S.-drawn wire to assure lowest transmission loss. The balance of hemp and wood fibers in the insulating paper assures the cable splicer of a clean splice in the shortest time. The material and work are repeatedly inspected during manufacturing, thus assuring the continued perfection of the product and process.

Once the cable is completed, tests are made of its conductor continuity, absence of short-circuits, sheath perfection, insulation and capacity.

company has spent $3,188,222 in its program of construction, extension and improvement of its telephone plant and equipment. Further substantial expenditures will be required.

On Jan. 19, the General company was given permission to provide key boxes for furnishing secretarial answering service in a place of business but, for that business and its employes only, and not for other users. Rates were established as follows:

Key Boxes

6-line capacity, single sided, less common audible signal, each	$3.50
with common audible signal, each	4.00
10-line capacity, single sided less common audible signal, each	5.00
with common audible signal, each	6.00

Also approved, was a paging service for use with automatic PBX systems and designed for two-way voice transmission. Rates are as follows:

	Non-recurring charge	*Monthly Rate*
a. Two-way amplifying unit including one loud-speaker and one microphone	$10.00	$8.00
b. Each additional microphone	3.50	1.25
c. Each additional loud-speaker	3.50	.75
d. Each station line of automatic type Private Branch Exchange System	3.50	1.50

Three Wisconsin Companies Ask Rate Increases

The Wisconsin Public Service Commission on Feb. 9, was to have heard the application of Amherst Telephone Co., for authority to increase its rates.

On the same date, the commission was also to hear the request of West Wisconsin Telephone Co., Menomonie, for a rate increase.

The application of Cream Valley Telephone Co., Hawkins, for a rate increase at Hawkins and Kennan exchanges was to be heard on Feb. 11.

Property Transfers, Dial Rates, Notes OKd in Neb.

The Nebraska Railway Commission authorized the Cozad Mutual Telephone Co. to transfer its property and franchise on Feb. 1 to the Cozad Telephone Co., it was reported on Jan. 23.

The commission also permitted the Panhandle Telephone Co., Dix, to increase its rates following its conversion to automatic operation. The company was also allowed to issue notes.

The Panhandle Telephone Co., a sole

Cost Saving!
Space Saving!
UNIFIED
DIESEL
GENERATOR
CONTROLS
Trans-O-Matic Transfer Switch
Generator Control
Battery Charger
Engine Start Control
Including
√ Trans-O-Matic Transfer Switch
√ Generator Control
√ Engine Start
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in a NEMA Type 1 51" x 34" x 11" cabinet with hinged access door.
Lake Shore now offers its well-known control line combined into one simplified control center. In addition to saving space, you can also save up to 20% of cost of individual controls. State generator rating when requesting details!
THE Lake Shore ELECTRIC CORPORATION
205 Willis Street / Bedford, Ohio

NEW...

midget pliers added to KLEIN line

Hardly larger than a package of your favorite cigarettes, these new Klein Midget Pliers will simplify many of those small jobs where space is confined.

Midgets in size but giants in performance, they solve major problems when wiring up electronic assemblies; making model trains, airplanes, automobiles, or in any extremely small or confined work.

These new midgets are additions to the famous Klein line of high-quality pliers that are backed by over a century of manufacturing experience. See your dealer.

No. 257-4 Oblique Cutting Plier	**Size 4 in.**
321-4½ Long Nose Plier	**4½ in.**
322-4½ (Without Knurl)	**4½ in.**
224-4½ End Cutting Plier	**4½ in.**

Free Bulletin on Klein Pliers

Bulletin 758 lists the many various pliers in the Klein line. A copy is yours for the asking. Write for it today.

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proprietorship owned and operated by Russell Brothers, was authorized recently to be sold to the Panhandle Telephone Co., Inc. The company provides dial service at Dix and Bushnell to 221 company-owned subscribers and 119 service station subscribers.

It proposes to borrow $60,000 to improve and modernize the exchanges and to do this it was necessary to incorporate.

The corporation will transfer to Mr. Brothers 174 shares of stock, as consideration for the sale.

Easton (Ill.) Company Asks Rate Increase

The Illinois Commerce Commission has announced that on Feb. 5, Easton Telephone Co. filed for a general rate increase totaling $2,400 annually and affecting some 200 subscribers.

The proposed rates would become effective on March 1.

Jamaicans Get First 24-Hour Overseas Service

The first 24-hour telephone service between the West Indies island of Jamaica and the outside world went into effect during Jan., 1959 it was announced by Carroll C. daCosta, U. S. director for the Jamaica Industrial Development Corp.

The link was established through the cooperation of the Jamaica Telephone Co., The Cable & Wireless (W.I.) Ltd. and the American Telephone & Telegraph Co.

It will connect Jamaica with 25 countries in western Europe, North, Central and South America, the Virgin Islands, Alaska and Hawaii on a 24-hour basis.

The new service, Mr. daCosta said, is part of a communications program designed to keep pace with the demand of the island's expanding industry and growing economy, and to facilitate communication between the numerous American companies and their branches or subsidiaries there.

Previous "off the island" telephone service was limited to the daylight hours 8 a. m. to 7 p. m. with service extended to 9 p. m. during the height of the tourist season.

Obituary

BYRON C. ROSS, 68, manager and secretary of the Flemington (W. Va.) Telephone Co., died on Jan. 21.

A former mayor of Flemington, Mr. Ross was a World War I veteran.

He is survived by his wife, Helen; a daughter, Mrs. John R. Dunn of Cambridge, O.; a brother, Claget of Philippi; a sister, Mrs. Fred E. Gates of Flemington; and two grandchildren.

Ask Financing OK in Ohio

The application of the United Telephone Co., Bellefontaine, to issue $750,000 in first mortgage bonds and $350,000 in sinking fund debentures was to have been heard by the Ohio Public Utilities Commission on Jan. 21.

OKs Georgia Purchase

Final approval for the purchase of Farmers Telephone Co., Springfield, was granted to The Dixie Telephone Co., Claxton, by the Georgia Public Service Commission, it was reported on Jan. 27.

Goes Against the Grain

"The law cannot equalize men in spite of nature." —VAUVENARGUES.

SAFETY THUMB TACKS

By John A. Bracken

Bits of safety reasoning, either pointed or flat, depending upon the way you look at them:

"To be alive tomorrow, practice *Safety* today."

•

"Through the application of *Safety*, a hazardous condition can be transformed into a *Safe* condition."

•

"Paying strict attention to *Safety* avoids accidents."

•

"Good *Safety* habits are the results of thinking good *Safety* thoughts."

•

"The need to practice *Safety* is never finished."

Ohio Company Co-Sponsors Teen Telephone Contest

The attention of teenagers, who generally are enthusiastic users and boosters of the telephone, was riveted on color telephones and on extension service recently when the Northern Ohio Telephone Co., Bellevue, in its Port Clinton exchange, entered into a "Phone of Your Own" promotion with a local shoe store.

The shop, Nissen's Shoe Store, offered an extension telephone in color for the remainder of the school year to a lucky teen whose name was to be picked at a drawing. Initial registration at the store carried no charge and each $1.00 purchase entitled teens to an additional try.

The contest registration lasted for a month. During that time, the store displayed color telephones in its windows and featured exhibits throughout

Answers To Questions On Page 30

(1) The following items should be recorded on a "no trunk" ticket:

a. The name of the trunk group in the "to" or "to—Pl" space.

b. "No trunk" in the "other" space or in the "space for reports" followed by the time of day.

c. For each subsequent "no trunk" encountered in a clock hour, enter a tally mark in the "other" space or in the "space for reports," directly below the time of day. If the clock hour changes, enter the time and tally the subsequent attempts under the new time entry.

(2) Please refer to the preface (introduction to questions and answers) for the answer to this question.

(3) The supervisor will refer to the list of certain paystation telephone numbers maintained at the chief operator's desk of the office involved and proceed as follows:

a. If the number is secured, give it out in the regular way.

b. If the number is not secured, or if she is advised that there is no list in this office, she explains to the subscriber that paystation numbers are not shown in the information records.

(4) Please refer to the preface for the answer to this question.

(5) Yes.

Build lines to STAY with the CHANCE 8-WAY!
Give the Guy a CHANCE
This gives you a mole's eye view of what goes on below "see" level when a Chance 8-Way Anchor is dropped into a hole the same size as the base plate and expanded into solid earth all around the hole.
Mike the Mole UNDERGROUND OBSERVER

8-Way Expanding Anchors give you all 'round holding power

Only the Chance 8-Way Expanding Anchor, with its 8 rib-reinforced blades, expands into solid earth *all the way around* to form a pyramid-like square.

This design adds strength to expanding anchors. The pyramid enlarges the effective area of the anchor's holding power. Blades that expand side by side leave no wasted space between them—can be shorter, less apt to bend, and expand in a wide area of solid earth all around the hole.

Make the Chance 8-way *your* standard for the kind of guying you can install and forget. Available from your anchor distributor, in sizes from 60 to 200 sq. in. in area.

. . . and there are CHANCE ANCHORS for all other soil and guying conditions

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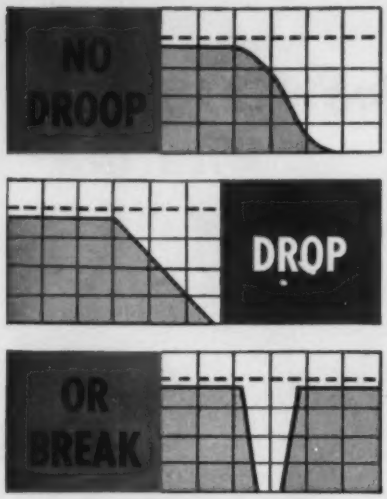
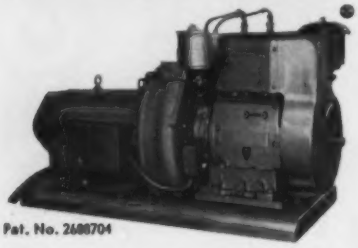


in Communications with U. S. MICRO-POWER



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the store explaining the value and good looks of a color extension.

Climax of the contest came at a special dance sponsored by the local Business & Professional Women's Club. A Cleveland television personality, "Big" Wilson, headed the entertainment, at which more than 600 were present, and drew the name of the winner.

The idea of a "Phone of Your Own" contest originated with the General Retailers' Service Agency of Nashville, which services Nissen's Shoe Store.

C. H. Galloway Sr. Retires As Head of Fla. Company

The Winter Park (Fla.) Telephone Co. has announced the following organizational changes which were approved by the board of directors on Jan. 20:

Carl H. Galloway Sr. retires as president but will continue as chairman of the board of directors.

C. H. GALLOWAY SR.

J. K. Galloway, former executive vice president, becomes president.

B. A. Galloway becomes vice president—operations. He was formerly vice president—plant and secretary.

William F. Burton, assistant treasurer, advances to treasurer.

Russell P. Hulbert is promoted to vice president—plant from assistant vice president—plant.

Kenneth F. Peloquin, assistant secretary, becomes secretary.

W. R. Rosenfelt, president of the First National Bank at Winter Park, has been elected a member of the board of directors.

Retiring President C. H. Galloway Sr. founded the Winter Park company in 1910. He is also president of Winter Park's subsidiary, Orange City Telephone Co. Mr. Galloway belongs to the Florida Telephone Association, Telephone Pioneers of America and the Independent Telephone Pioneer Association. New President J. K. Galloway, who is also executive vice president of the Orange City Telephone Co., began his telephone career in 1929. He is a director of the Florida Telephone Association and chairman of the association's excise tax committee. He also serves on the USITA REA Committee. A member of the Telephone Pioneers of America and the Independent Telephone Pioneers Association, Mr. Galloway served in the U.S. Navy during World War II and is a member of the Navy League of the United States.

J. K. GALLOWAY

Establish Kelly Award In Telecommunications

Bell Telephone Laboratories and the American Institute of Electrical Engineers have announced the establishment of an award for achievement in the field of telecommunications, to be known as the Mervin J. Kelly Award.

The award is named in honor of Dr. Kelly, formerly president and now chairman of the board of Bell Laboratories, whose retirement is effective Mar. 1 after 41 years of scientific and administrative service with the Bell Telephone system.

The Kelly Award will be made annually by the American Institute of Electrical Engineers to an individual who has made an outstanding contribution to the advancement of the art of telecommunications. The prize will consist of a bronze medal, a cash stipend of $1000, and a certificate. The first award will be made by the American Institute of Electrical Engineers in 1960. The award is being sponsored by Bell Laboratories but will be administered solely by the Institute.

SO THAT WORDS WON'T FAIL

Every telephone man knows the heavy responsibility placed on batteries for maintaining uninterrupted service. This is particularly true in the case of ac power failure, when standby batteries must carry the full load.

To make the best possible investment in batteries, specify C & D. For lead-antimony batteries with a 14-year life—get C & D PlasticCell. If you need a premium battery—install C & D PlastiCal.® It's a lead-calcium grid battery that will last for 25 years in full-float service. Both PlastiCell and PlastiCal batteries feature full .266″ thick positive plates—triple insulation—clear plastic containers. These features plus many more—make C & D your best battery buy.

If you don't have complete, up-to-date literature, it will pay you to write for Bulletins T-532 and T-533.

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For Fastest Safest • Surest Live Wire Cutting!

• Made with utility men in mind! • Cuts insulated wire soft or medium hard, solid copper wire and medium hard steel wire up to ½"! • Rugged, durable handles, Cohardite insulated • Factory-tested to 20,000 volts! Also available with round edge jaws for harder wire.

The TN STEEL CABLE CUTTER

For Steel Cable & Wire Rope
Shear-action cutter — cuts all soft or hard steel cable and wire rope up to ¾"! No deforming of wire — notched jaws lock cable during cut! Cuts fine or course stranded cable easily and cleanly.

2 CN SPECIAL SHEAR CABLE CUTTER

For Copper and Aluminum Cable
Cuts soft, non-steel cables, insulated or not, up to 1⅜"! O.D. Jaws pass each other for clean cutting! A "must" for every company using Copper or Aluminum Cable. Not recommended for ACSR.

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Ghormley Succeeds Henson At Lincoln T&T

Organization changes effective Feb. 16 in The Lincoln (Neb.) Telephone & Telegraph Co. have been announced by President Thomas C. Woods Jr.

Paul H. Henson, chief engineer, who has resigned to become vice president of United Utilities, Inc. of Kansas City, Mo. has been succeeded by Roger K. Ghormley, formerly systems planning engineer. B. A. Isaman, formerly outside plant engineer, becomes supervisor of planning, reporting to the vice president. Harlan W. Cane, cost engineer, becomes control supervisor on the staff of the secretary-treasurer.

R. K. GHORMLEY

B. A. ISAMAN

Mr. Ghormley joined the Lincoln company in 1946 as equipment engineer and became general equipment engineer in 1955 and systems planning engineer in 1958. He graduated from Kansas State College in 1941 with a BSc degree in electrical engineering and received a master of science degree in electrical engineering in 1957 from the University of Nebraska. From 1941 to 1946 he was an engineer with the Automatic Electric Co. He is a registered professional engineer and a member of Sigma Tau and Eta Kappa Nu.

Mr. Isaman was employed with the company in 1935 at Hastings, Neb., as a groundman. Later he was a testman there before moving to Humboldt, Neb., as manager in 1946. In 1948 he became an engineer at Lincoln and became outside plant engineer in 1955.

He is a graduate of Hastings College where he holds an AB degree in mathematics and a BSc degree in physics. He attended Carnegie Institute of Technology for two years and then was a teacher and coach at Curtis Agricultural School.

Mr. Cane entered the telephone business at Grand Island (Neb.), with the Nebraska Telephone Co. as chief clerk to the district foreman. He joined the Lincoln company in 1923 as a clerk in the engineering department and became cost engineer in 1929.

H. W. CANE

Canadian Bell to Continue Expansion Program in 1959

The Bell Telephone Co. of Canada will continue expenditures in 1959 to meet telephone needs arising out of the home-building boom, as well as to improve on present systems, it has announced.

In surveying company growth since 1946, Bell stated that the number of telephones in service tripled between 1946 and 1958. The number of dial telephones grew from 69.3 per cent of the 1,177,924 telephones in 1946 to 88.7 per cent of 2,954,884 in use by 1958.

In 1958, Canadian Bell slashed its telephone waiting list almost in half,

despite the boom in new homes. For example, the waiting list for party lines was cut from 34,000 to 11,000. In all, Bell added 185,000 telephones last year.

The company also recorded an 8 per cent jump in long distance calls during 1958.

In addition, Bell, along with the Quebec Telephone Co., pushed communications farther north with a radio relay system that serves both Goose Bay and Knob Lake.

SW Bell Establishes Area Headquarters in Houston

Southwestern Bell Telephone Co. has established a new area headquarters in Houston, Tex., R. A. Goodson, vice president of the company's Texas operations, announced on Jan. 28.

The reorganization involves splitting the state's telephone operations into two sections. Mr. Goodson will continue to head the company's operations in Texas.

William L. Lindholm, assistant vice president of operations at the company headquarters, is appointed general manager in charge of the new south Texas area, with headquarters in Houston.

Besides Mr. Lindholm, a new operating staff is being selected to serve under him.

Henry H. Mudd, Houston division manager, is promoted to general commercial manager. Other area department heads will be Norman Gessley, division plant superintendent, St. Louis, who becomes general plant manager; Curtis T. Mallory, division traffic superintendent, Austin, Tex., who becomes general traffic manager; Harold J. Miller, chief engineer for Oklahoma, who becomes chief engineer of the new south Texas area; and Herman C. Mitachrich, division manager at Oklahoma City, who becomes general staff manager for the new area.

Besides these operating heads, Sam E. Holcomb, general accounting manager for Kansas, is appointed general accounting manager, south Texas area.

The new area office will supervise telephone operations for all south Texas—including the San Antonio and Austin divisions and the territory east to the state line.

The north Texas area will continue to operate out of Dallas.

Meanwhile, Southwestern Bell announced the following appointments to other key positions in the company:

Fred B. Hunt, general traffic manager for Missouri, is appointed assistant vice president of operations for the company. Hunt succeeds Lindholm.

Louis C. Bailey, assistant vice presi-

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780 TRUCKSTER®
. . . built specifically for greatest light hauling economy

Thousands of users have proved it. This rugged, versatile vehicle powered by the Cushman Husky 4-cycle engine handles an 800 pound payload at amazingly low cost (less than a penny per mile) and stops the dollar drain of conventional equipment used on light hauling jobs.

New 1959 models incorporate no less than a dozen important advances for improved performance, safety and ease of operation. They include:

- Constant mesh transmission and improved clutch
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- Independently operated parking brake
- Tapered roller bearings on all wheels
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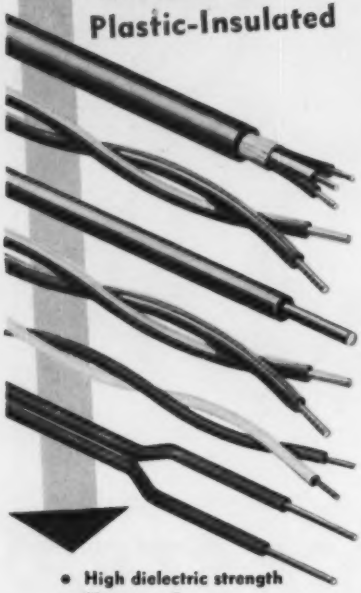

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- **Color-coded soft copper conductors**

Twin, triple, quad construction, with and without outer plastic jacket to extend circuits from outside terminating devices to station sets inside buildings.

Twin construction, with one tracer, twisted inside station wire . . . used in all types of building ducts, or exposed. Also twin or triple flat web type construction for installation with stapling gun.

Twin, triple, quad jumper wire — distributing frame wire nom. wall of .015". Semi-rigid polyvinyl chloride.

Ground wire for ground connections from station protector to ground.

For details, write

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Hickory, North Carolina

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dent-personnel, succeeds Hunt as head of the Missouri area's traffic operations.

Ben F. Givens, division manager, San Antonio, Tex., succeeds Bailey.

Harvey J. McMains, general transmission and protection engineer, succeeds Miller as chief engineer for the Oklahoma area.

F. R. Arnoldy, transmission and protection engineer in the company's general engineering department, succeeds McMains.

Herman B. Dixon, general accounting manager for Arkansas, succeeds Holcomb as head of the Kansas area accounting operations.

James W. Hughes, division accounting manager, Oklahoma City, succeeds Dixon.

Three Promotions Announced By Rochester Telephone

Rochester (N. Y.) Telephone Corp. announces the following organization changes, effective Feb. 1:

Justin M. Williams is promoted to traffic superintendent.

J. M. WILLIAMS

Mr. Williams began his career in 1930 with the Rochester Telephone Corp. as a salesman. After a series of promotions he became area commercial manager in 1952, and director of commercial methods and results in 1958.

He is a graduate of East High School in Rochester, and attended both the Rochester Institute of Technology and the University of Rochester.

Wilbert Lightfoot becomes assistant to the vice president-plant.

Mr. Lightfoot started with the Rochester Telephone Corp. in 1929 as a lineman. After various craft assignments, he was promoted to maintenance foreman in 1952. In 1957 he became supervisor of special equipment, and in 1958 was promoted to wire chiefs supervisor-suburban.

In his new position, Lightfoot will assist the vice president-plant in all

WILBERT LIGHTFOOT

areas of plant department operations, which comprise the installation and maintenance of physical properties, the purchasing of all equipment and supplies, and the maintenance of the motor vehicle fleet.

He is a graduate of West High School, and attended the Rochester Institute of Technology and the University of Rochester.

R. W. BROOKINS

Richard W. Brookins moves up to buyer. He has been with Rochester Telephone Corp. since 1945. He started as a central office frameman and progressed to senior switchman.

Plan to Expand Mexican Telephone Network

The Mexican Telephone Co. has announced it will invest 17 million dollars in expansion during 1959.

A company spokesman said 16,000 new telephones will be installed in the federal district and 12,000 in the rest of the country during the year to boost

POWERS *American*

SERIES LM-4

"Load-Master"

HYDRAULIC CRANE

Saves time and manpower because it speeds up loading and unloading jobs... handles work normally requiring several specially-equipped vehicles.

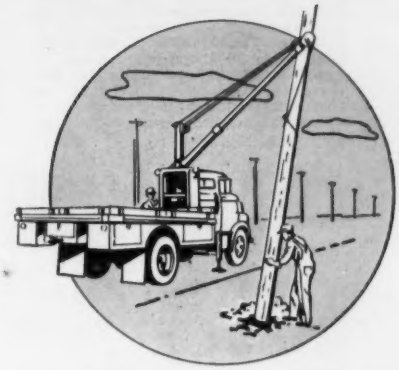
Load-Master lifts a 4000 lb. load with ease... moves it safely and quickly under the most adverse job conditions. Power is derived from a heavy-duty hydraulic-pump driven by the truck engine. Controls are located in a position which gives operator full view of the crane at all times.

Operator has absolute control of load at all times. The hydraulic system requires intentional movement of control levers before load position can be changed... and the load cannot drop if the truck engine stalls.

OPERATING FEATURES: Telescopic-type hydraulic boom can be spotted at any point from horizontal position to an 85° angle of elevation; hydraulically-powered mast will turn 360° in either direction; specially-designed winch, driven by a hydraulic motor, is grooved to wind cable evenly; hydraulic outriggers, with swivel-mounted foot plates, furnish extra side stability.

Load-Master is ideally suited for use with the Powers-American Series 300 Body shown above. It can also be furnished with bodies of other types... or shipped for mounting in your shop or local garage.

Price information and descriptive literature will be sent upon request.



Load-Master can be used for setting poles up to 45' in length. It requires only 20" of mounting space behind the truck cab. Boom extensions to 22' can be furnished.

McCABE-POWERS AUTO BODY COMPANY

5900 NO. BROADWAY
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625 CEDAR STREET
BERKELEY 10, CALIF.

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A PRODUCT OF ALLIED RADIO

INSTRUMENT KITS FOR TELEPHONE USE

(the money-saving, easy-to-build kits described by Harold D. McKay in Telephony)

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20,000 OHM/VOLT
VOM KIT
only $29.50
$2.95 Down

Single most valuable instrument for trouble-shooting. Low-cost quality 32-range VOM, featuring 4½", 50-microampere meter; 1% precision multipliers; 2% accuracy full-scale deflection. Ranges: AC, DC and output volts, 0-2.5-10-50-250-1000-5000; Resistance, 0-2000-200,000 ohms and 0-20 meg; DC ma, 0-1-10-100; DC amps. 0-1-10; Decibels, −30 to + 63 (6 ranges). Black bakelite case, 6¾ x 5¼ x 3¼". Easy to assemble. 5 lbs.

83 Y 140. Net only.....$29.50

knight-kit
AUDIO GENERATOR KIT
only $32.95
$3.30 Down

An ideal audio frequency source for checking telephone line response and filter circuits. Covers: 20 cps to 1 mc in 5 ranges. Output voltage: 10 volts into 600 ohms impedance. *Offers the flat response of a lab standard* — ± 1 db to 1 meg. Generator imp., 600 ohms. Less than .25% distortion from 100 cps through the audible range; less than .5% when driving 600 ohm load at maximum output. Continuously variable step-attenuated output. 17 lbs.

83 YX 137. Net only.....$32.95

FREE 452-PAGE 1959 ALLIED CATALOG

See the complete selection of KNIGHT-KITS—plus the world's largest stocks of electronic equipment: Stereo hi-fi systems and components, recorders, Amateur supplies, instruments, parts, tubes, tools, books, etc. FREE—send for it!

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ALLIED RADIO, Dept. 142-B9
100 N. Western Ave., Chicago 80, Ill.

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☐ Send FREE 1959 ALLIED Catalog

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the Mexican Republic's network to 450,000 telephones.

Despite the expansion, it is reported that telephone service in the interior continues to be erratic and slow. To have a telephone installed, a prospective customer must buy $240 worth of shares in the company, and wait up to six months for installation.

IN THE NATION'S CAPITAL

(Continued from page 18)

ever, that a pay system could grow only by feeding on the present free system, indicating that his company is still unalterably opposed to the idea.

Cold War on Rock-and-Roll

Last week, Washington rocked with alternate signs of freezing and thawing in the cold war area. A Russian general was telling us how short our "arms" were, on the same day that old Baldy Khrushchev invited Ike, and any party he pleased to take along, for an all expense tour of the Soviet Union, or any part of it. On our side, Mr. Dulles pinned the fibbers' badge on Mikoyan for saying that one of our transport planes had crashed accidentally, while a tape recording plainly proved that the Russians had ganged up and shot it down on purpose.

Meanwhile the administration and Congress argued over how far we are behind the Reds on missiles, and when we can catch up, if ever.

Highlighting a Santa Monica (Cal.) Chamber of Commerce banquet, held on Jan. 15, Edwin M. Blakeslee (right), chairman of the board for General Telephone Co. of California and outgoing president of the local Chamber, received from Russell K. Hart (right), mayor of Santa Monica, a United States Chamber of Commerce citation for all-around achievement. The new Chamber president, Ernest Gulsrud, said the Chamber "stepped to a higher plateau in 1958." He praised Blakeslee and his committee for their effort to make the Chamber play a greater role in community life.

While all this backing and filling was going on, it is comforting to know that there is at least one department in which our side is way out ahead of the Russians. And, don't they know it! Nothing makes the Soviet bosses and their puppets madder than the way all their little Ivans and Olgas take to American jazz. Understand, this writer is no addict of the whining, guitar-strumming tribesmen who bemuse our teenagers into hysterics. But, if that is the sort of thing that makes the Russian leaders sore, and their offspring happy, I say welcome. For my part, I would even export more of our young microphone dervishes—boots, sideburns, back curls and all—if that is what the communist youth really wants.

Anyhow, it is a tribute to our American communications industry, in its broadest sense, that the Reds have never been able to seal out our jazzy music as effectively as they have sealed out our Western thoughts and ideas along other lines. American "artists" (Saints forgive the expression!) make platters of their tantrums. These are recorded so perfectly by our record makers that, when broadcast over radio, they can throw a bunch of the scrub heads in the acne set into fits 6,000 miles away, just as effectively as a "live band" at the local armory.

These records can be sold, sent, smuggled, or otherwise distributed all over Europe. Those which do not find their way physically behind the Iron Curtain, can be played on borderline radio stations. The kids behind the curtain eat it up—regardless of restrictions on listening to foreign broadcasts. Somehow they manage, with bootleg or do-it-yourself radio sets, to catch the "hot stuff" out of Vienna, West Germany, and other border points—including Voice of America. Indeed, a top official of the Voice of America last year told a skeptical congressional committee that a sure-fire way of getting any choice bits of Western propaganda across to a Red audience was to sandwich it in between liberal slices of rock-and-roll.

The Red propagandists think these are unfair tactics—on a par with the Pied Piper of Hamlin. They say that such music is degenerate—and maybe they have a point. But the real sign of surrender in this sector of the cold war front came last week from Emre Szoldas, music conductor of Radio Budapest —in puppet Hungary. Emre is apparently one of those realists who believe that if you can't lick 'em, join 'em. Anyhow, he says that the communist countries will now try to create their "own type of jazz." This we've got to hear! Can you imagine those Red kids

TBM SERVICE ENTRANCE MAST
for
OUTDOOR TELEPHONE BOOTHS

Patent Pending

Model TBM Service Entrance Mast provides complete service entrance facilities for outdoor telephone booths with the definite plus advantages of lower cost and easier installation. Raises power lines for specified ground clearance. Looks better, lasts longer, costs less than any comparable installation.

FITS MOST MODELS OF OUTDOOR BOOTHS

MEETS ALL REQUIREMENTS

LOOKS BETTER

The TBM Mast is engineered for the job. Adds to the appearance of any style booth.

LASTS LONGER

Heavy gauge steel tubing used throughout for life-time service. Only heavy duty fittings used.

COSTS LESS

Actual installations show savings up to two-thirds over conventional pole and 4" x 4" installations.

Utility Service Co., Inc.

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FEBRUARY 14, 1959

To prevent pole and power line leaning...

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CF&I GALVANIZED STEEL STRAND

High in Quality. CF&I carefully controls every stage of production, from the making of the steel through the drawing, galvanizing and stranding of the wire.

Readily Available. CF&I three- and seven-strand constructions can be promptly shipped to strategically-located distributors throughout the country.

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Safe. CF&I Strand meets or exceeds ASTM Specifications A-122 or A-363; or can be made to customer specifications.

Easy to Work. CF&I Strand is extremely ductile. It handles easily and helps linemen do better installation jobs.

Next time you need strand—for guy wire, messenger wire or overhead ground wire—be sure to investigate the advantages of CF&I Galvanized Steel Strand. Your nearby CF&I representative or local electrical distributor will give you full details. 5734

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THE COLORADO FUEL AND IRON CORPORATION

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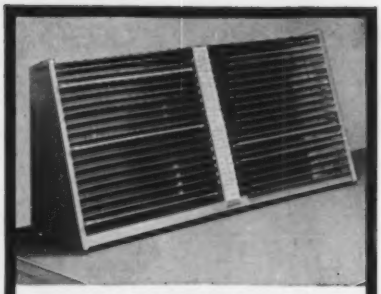

Trouble Recorder Card Rack

For fast orderly sorting of Trouble-Recorder cards, has 38 card slots in two banks with index strip between. Base is 38" by 9". Height 15". No. D30225-1.

Telephone Office Equipment

to lighten your work and improve efficiency

Work Bench

For repair, assembly, test and paper work. Top drawer divided into 24 compartments for parts and tools. Large file drawers are for circuit drawings. 54" x 25" top covered with masonite. Height 36". Drawers may be inserted from back to reverse position of kneehole. No. D29978-3.

Drawing Table

For circuit drawing in crossbar offices, provides central location for reference material. Masonite top is 30" x 60". Height 36" at front, 42" at rear. Three large file drawers at left for drawings. Eleven shelves at right are 2½" high, 14" wide, 18" deep for sketches, sequence charts, book type SD sheets, trunk serials, etc. No. D30326-1.

Color of all units: Baked-on gray enamel unless otherwise specified.

TWIN POST

Neubauer

MANUFACTURING CO.

517 LOWRY AVENUE N. E.

MINNEAPOLIS 18, MINN.

getting "really gone" over something by the name of "More Tractor Production Blues" or the "Hero-Workers Stomp"? You couldn't find a cool cat from Buda to Pest who would dig that square icky. It might even start another counter revolution.

Emre explains, by way of rationalization, that Western songs broadcast with their original words defeat any true "cultural communications" because the ideological concepts are so different. That's why, he says, the Reds will have to get with their own brand, which will be 100 per cent pure, ideologically speaking. Evidently Emre has had some real trouble trying to figure out the ideological content of some of these rock-and-roll songs. Next time you get trapped by the youngsters into listening to "Bucket Got a Hole," just try figuring out what the ideological message is. It's real hard!

On second thought, maybe the Reds better skip the whole thing and stay with their scientific triumphs. As the American humorist, S. J. Perelman, once wrote: "I guess I'm just an old mad scientist at heart. Just give me a secret underground laboratory, and a half dozen atom-smashing machines and a beautiful girl waiting to be turned into a chimpanzee, and I care not who writes the nation's songs."

Rawlplug Atlanta Company Announces Eggli Is Manager

Paul A. Eggli Jr. has become manager of the Rawlplug Atlanta Co., it was announced by A. J. McEwan, vice president-sales of The Rawlplug Co., Inc., 200 Petersville Road, New Rochelle, N. Y.

Mr. Eggli joined Rawlplug Atlanta in 1949. He succeeds Jack Sutter, who retired on Feb. 1 after 25 years service.

Rawlplug Atlanta, which supplies masonry anchoring products to contractors, industrial users and distributors throughout Georgia, Alabama and central Tennessee, has an office and warehouse at 295 Hayden St., N. W., Atlanta 13.

Budelman Names Westrex Electronics Distributor

The Budelman Electronics Corp. has announced the appointment of Westrex Corp. as its exclusive, world-wide export distributor.

Westrex Corp., a division of Litton Industries, and formerly the export division of Western Electric Co., is a research and development, manufacturing, sales, installation, and service organization specializing in equipment and processes for the communications field and for the sound recording and reproducing industries.

Westrex's main office is located at 111 Eighth Ave., New York. Including its subsidiaries, it has about 1200 employes located in 40 countries throughout the free world.

Westrex is the international distributor for products of numerous manufacturers and has been a leader in the sales and installation of single sideband radio telephone equipment.

Budelman Electronics Corp. is an engineering and manufacturing organization specializing in the design and production of "Thin-Route" microwave multiplex radio systems and telephone carrier equipment. Budelman's offices, laboratories and plant are located in Stamford, Conn.

This company was formed in 1951 by a group of engineers and executives who had pioneered in the development of many important items in the military and commercial communications fields.

The recently announced export agreement was completed on Dec. 2, in the offices of Westrex Corp. The Budelman staff was represented by Barnet S. Trott, vice president; and Robert L. Feistel, sales manager. Westrex personnel included: R. E. Warn, vice president and general manager; U. B. Ross, director of foreign operations, and George Sisom, merchandise manager.

New Cuban Telephone Chief Engineer Named by ITT

Promotion of August F. Jones to chief engineer of the Cuban Telephone Co., Havana, Cuba, an operating company of the International Telephone & Telegraph Corp., was announced recently by John T. Naylor, vice president of ITT.

Mr. Jones joined the ITT System in 1925, following graduation from Cornell University with a degree in electrical engineering. He had previously been granted B.S. and M.S. degrees from Denison University, Granville, O., where he was elected to Phi Beta Kappa.

In 1925-1926, he was a student engineer for the Cuban Telephone Co. and successively, for 14 years following, an engineer for the Spanish Telephone Co. and for ITT's Standard Electric Co., Madrid.

In 1950 he was a member of an ITT advisory group to Greece which aided that country in rehabilitating and expanding its telecommunication system.

Prior to his promotion, Mr. Jones was an executive engineer at ITT Laboratories, Nutley, N.J., and had been a member of the Laboratories staff since 1955. He is a member of the American Institute of Electrical Engineers and serves on its communications switching systems committee.

Gould National Appoints Stover to Sales Post

Appointment of Harvey N. Stover as assistant vice president—industrial sales, is announced by Gould-National Batteries, Trenton, N. J.

H. N. STOVER

Mr. Stover started in the industrial storage battery industry in 1929 and holds several patents on industrial battery design. He was formerly chief engineer, storage battery division and later assistant general manager, battery division, Philco Corp.

When Philco sold its industrial storage battery division to Gould-National Batteries in 1947, Mr. Stover was appointed coordinator of engineering, and later was made manager of telephone sales.

Stover is chairman of the sectional committee on storage batteries, American Standards Association.

Cushing Is Chief Engineer, Lenkurt Electric of Canada

Thurb D. Cushing has been promoted to a new position as chief engineer of Lenkurt Electric Co. of Canada, Ltd. at Burnaby, B. C.

Previously, he was applications engineering manager at Lenkurt's U.S. headquarters in San Carlos, Cal.

Mr. Cushing, with Lenkurt since 1957, will direct engineering of the multi-channel carrier and microwave systems and related equipment which the firm manufactures and markets to customers throughout Canada.

His experience includes eight years with North-West Telephone Co. in Vancouver where he was responsible for major radio engineering projects, including the British Columbia portion of the Trans-Canada TD-2 system. Earlier positions with Electronic Laboratories of Canada and the National Research Council of the Department of National Defense gave him wide experience in other important radio communications projects.

T. D. CUSHING

He studied at the University of British Columbia, and is a member of the Institute of Radio Engineers.

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FOR SPEED
FOR QUALITY SUPPLIES
FOR PERSONALIZED SERVICE
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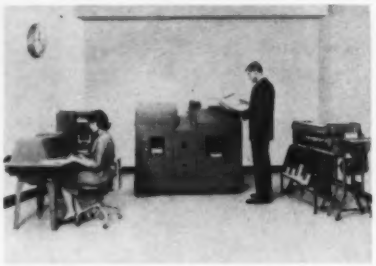
CINCINNATI 42, OHIO

News on New Products

SMALL COMPANY DATA PROCESSING—A new system of punched-card data processing specially designed for small business has just been announced by Remington Rand Univac Division of Sperry Rand Corp.



The new system makes it possible for small companies, or branches and plants of larger ones, to machine process such accounting work as: production control, payroll, inventory control, accounts receivable and sales analysis.

Howard V. Widdoes, vice president for sales, Univac-Systems, of Remington Rand Univac Division, called the new system a major advance for all business firms of average size. "It affords an opportunity to make use of the scientific knowledge and experience formerly available only to larger organizations," he said.

Consisting of four basic pieces of equipment—the alphabetical punch, sorter, alphabetical tabulator and summary punch, and reproducing punch—the system operates at a speed of 60 cards-per-minute, and can be adjusted to perform faster. Additional units can be added as desired.

Cost of the specially-engineered equipment is below comparable manual systems, Remington Rand reports. Request NP1018.

•

AUTOMATIC MESSAGE RELAY SET—The addition of an all-new automatic message relay set to the Model 28 Line of communications equipment has been announced by Teletype Corp.

The new unit, called the Model 28 RT (reperforator transmitter-distributor), is described as a high capacity, self-contained, punched tape message relaying facility for receiving wire signals at speeds ranging from 60 to 200

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP1018_____; NP1019_____; NP1020_____; NP1021_____;
NP1022_____; NP1023_____; NP1024_____; NP1025_____;
NP1026_____; NP1027_____; NP1028_____; NP1029_____;
NP1030_____; NP1031_____.

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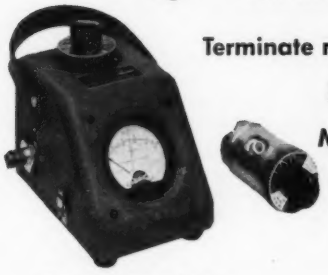
2/14/59

Average-reading wattmeters, bi-directional power monitors

Sierra 185A-15FN Wattmeter



Sierra 164 Power Monitor

Terminate rf coax systems

Measure rf powers

Measure incident, reflected powers

Match antennas, loads

New convenience, simplicity, for terminating rf coaxial systems and measuring average rf powers is available with Sierra 185A series Average-Reading Termination Wattmeters. Frequency range 20 MC to 1,000 MC, accuracy of ±5%, and VSWR 1.2 maximum. Three instruments cover, respectively, following power ranges and maximum dissipations: 0 to 5/15 watts, 15 watts; 0 to 30/100 watts, 100 watts; 0 to 150/500 watts, 500 watts. Conservatively rated, negligible rf leakage, ideal loads for CW, AM and FM transmitter and oscillator tests.

New convenience, simplicity for intermittent or continuous measurement of incident or reflected power is available with Sierra 164 series Power Monitors. Direct reading, accurate within ±5%, high directivity, low VSWR. Four plug-ins offer 1, 5, 10 and 50 watts full scale, 25 MC to 1,000 MC. Two additional plug-ins offer 10, 50, 100 and 500 watts full scale. A further plug-in covers 10 MC to 75 MC, 50, 100, 500, 1,000 watts full scale. No auxiliary power needed; power flow direction reversed by control knob at top of plug-in.

Write for complete details

sierra

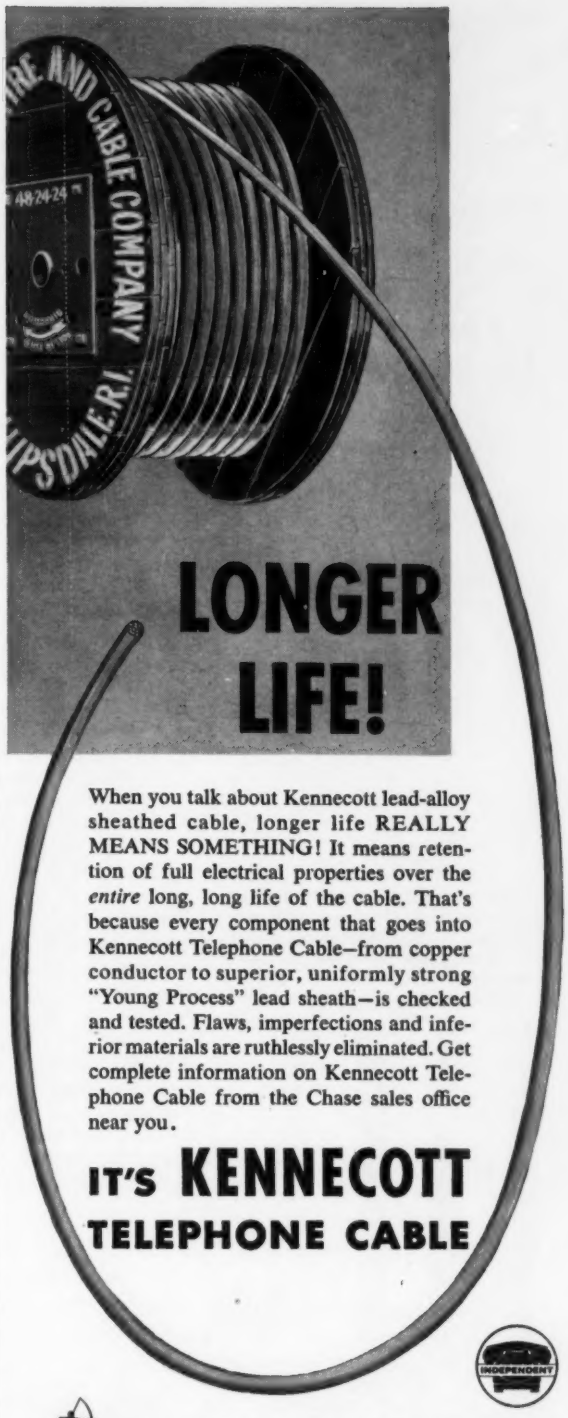
Sierra Electronic Corporation

A Subsidiary of Philco Corporation

4696W Bohannon Drive

Menlo Park, California, U.S.A.

Sales Representatives in Major Cities



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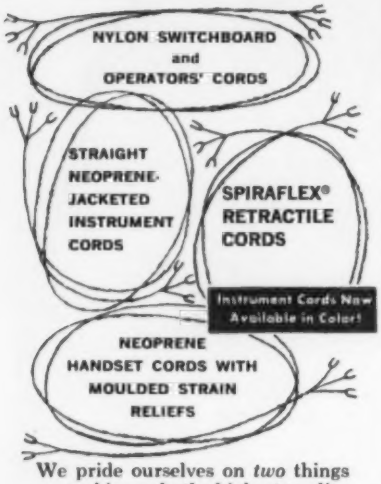
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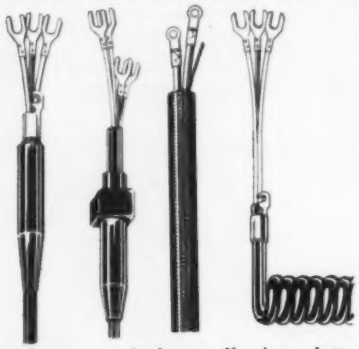

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COMMERCIAL CORD COMPANY, INC.

CLIFTON SPRINGS, N. Y.

Phone: HOward 2-2311

QUALITY CORDS FOR ALL MAKES AND TYPES OF TELEPHONE INSTRUMENTS

words per minute, converting them into perforations in paper tape, and transmitting them at the same or another speed to local or remote receiving stations.

It is designed, according to the company, for a variety of uses in communications, data processing and automation —included in these are applications as an input-output speed converter, intermediate message storage, business machine-communications linkage, automatic data accumulator and control device for automated factory equipment.

The RT set features three message relaying devices: (1) a receiving unit for accepting incoming wire signals, punching and printing the signal data on a standard 11/16 inch, 5-level "common-language" paper tape; (2) a sending unit for reading and translating the taped data into electrical impulses for transmission either cross-office or cross-country; (3) and a tape handling unit with tape supply reel, intermediate tape storage bin, and tape winder reel.

A choice of three tape punching components is reported as being available for adapting the RT set to a wide range of individual application requirements —a typing and a non-typing tape punch for accepting sequential (serial) signals and a non-typing tape punch for accepting parallel signals.

A special-design twin-shaft sending component features transmission of sequential or parallel-wire signals and automatic end-of-message shut off.

Receiving and sending units will operate at the same or different speeds, e.g., receive at 60 wpm, transmit at 100 wpm.

Model 28 RT sets may be mounted singly or in pairs, the company says, in a newly-designed universal cabinet featuring on-off switches, tape warning lights, and other facilities essential for external control of equipment within the cabinet. Request NP1019.

•

INSULATOR PIN—A new insulator pin, No. 22981, is now available from Hubbard & Co. Made of Cor-Ten steel,

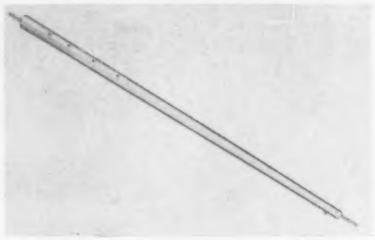
the pin, according to the manufacturer, tests to an in use life of from five to six times that of pins made from carbon steel. It has an additional advantage of rounded wrench hold corners.

By eliminating the sharp corners found on conventional pins, Hubbard says it prevents the danger of wear and damage to aluminum, and other types, of conductor as it is pulled across the pin base.

The Cor-Ten alloy, which is reported to be stronger, is also galvanized and is particularly adaptable to regions of highly corrosive industrial atmosphere, or sea coast area. Request NP-1020.

•

GUY PROTECTOR—Hubbard also announces a new, economically priced guy protector, Stock No. 7628.



Only a simple spring clip at the top and a single bolt at the bottom are said to be required for swift, sure installation.

The new tapered protector is made of 18-gauge galvanized steel. Edges are turned and rounded, eliminating the hazard of sharp corners being exposed to pedestrian contact. The product is said to have a high visibility factor.

The No. 7628 fits rods up to 1¼ inch inclusively and is available in eight foot lengths, No. 7627 is seven feet in length. Request NP1021.

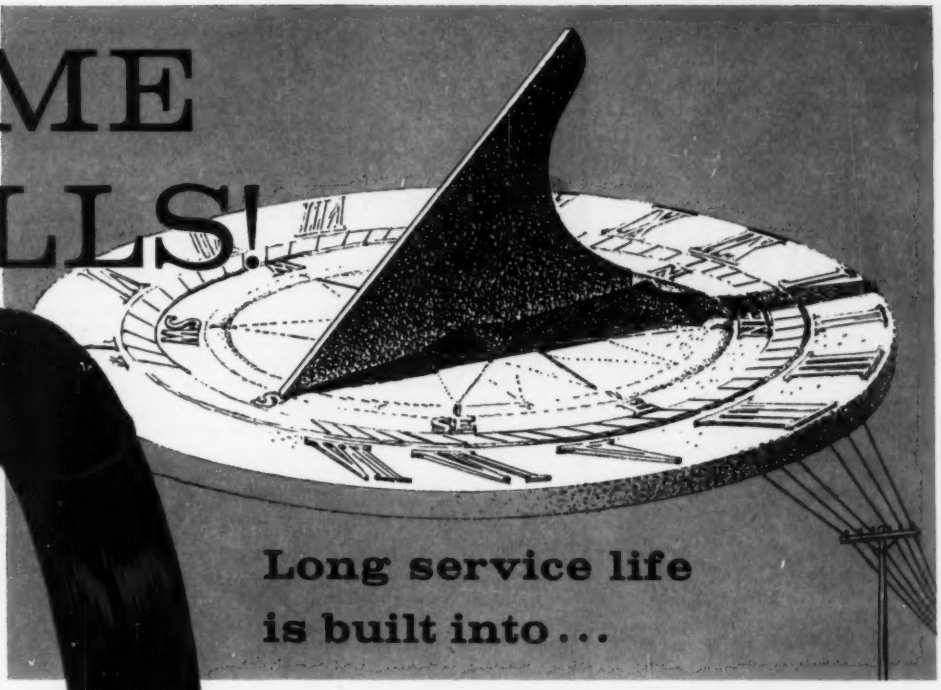
•

SHOCK-ABSORBING HAMMER—A new type hammer, which absorbs much

of the impact shock, is being introduced by Ramset Fastening System, Olin Mathieson Chemical Corp., it was announced by James J. Clarke, sales manager.

The new hammer, which weighs 2

TIME TELLS!



Long service life is built into . . .

Copperweld Line Wire T.M.

Through the years, copper has been known for its permanence and conductance . . . steel for its strength. Each of these metals, alone, provides only a part of the qualities necessary for good line wire. All the qualities are brought together when these two time-tested metals are inseparably molten-welded to form Copperweld* Line Wire.

The thick copper covering provides high, lasting conductivity and protection against corrosion. With its protected steel core, Copperweld withstands heavy ice and wind loads, assuring safe and economical long-span construction. Records of companies everywhere show that Copperweld Line Wire gives long service life at lowest annual cost.

*trademark

SOLD BY LEADING DISTRIBUTORS

COPPERWELD STEEL COMPANY

WIRE AND CABLE DIVISION *Glassport, Pa.*

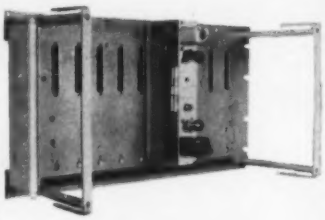
For Export: COPPERWELD STEEL INTERNATIONAL COMPANY, New York

CONDUCTIVITY STRENGTH PERMANENCE

PROVED IN SERVICE FOR OVER 40 YEARS

another reason for COLLINS microwave

ease of maintenance



Reduction of maintenance man-hours is designed into Collins systems. Preventive as well as critical maintenance is simplified by a number of electro-mechanical design features.

Modular design and plug-in units allow quick restoration of service and repair during non-critical hours.

Snap-off covers and articulated hinges provide access to all components; and test jacks and built-in metering facilities speed trouble shooting. Printed wiring throughout assures long-term stability and uniformity. The number of tube types has been kept to a minimum and the ruggedized ARINC types used have extremely long life characteristics.

This is another progressive feature of the most advanced microwave system available. For detailed information, write Collins Radio Company, Sales Service, 1930 Hi Line Drive, Dallas, Texas.

COLLINS

CREATIVE LEADER IN COMMUNICATION

pounds, eliminates much of the fatigue of hammer-in work, Mr. Clarke said.

The head of the hammer is not rigidly connected to the hammer handle but suspended from it by elastic shocks within the head housing. These shocks, or "O-rings," are made of a resilient material having energy absorbing qualities. It is by suspending the hammer head that impact shock is minimized.

The new hammer, called "Shure-Drive," was designed specifically for use with Shure-Set, Ramset's hammer-in tool. The company states Shure-Set is a tool which converts the energy supplied by a hammer stroke into fastening power enabling a worker to manually fasten such hard-to-penetrate materials as thin steel and concrete.

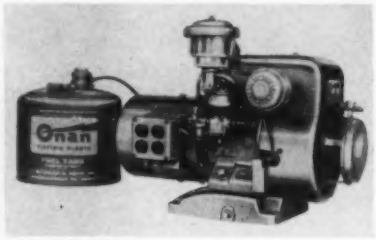
Mr. Clarke declared the new hammer will be sold separately as well as with Shure-Set.

Mr. Clarke also reported that the new hammer has minimal rebound (two thirds less than conventional masonry hammers), and delivers more power more accurately and with less effort.

Mr. Clarke explained that Shure-Drive would serve best for difficult hammering such as into concrete and steel. Request NP1022.

•

DUAL-ROLE ELECTRIC PLANT—A new lightweight 2500-watt electric generating plant has been specifically designed for a dual role . . . portable



and/or emergency standby . . . according to an announcement by D. W. Onan & Sons Inc.

Weighing 140 pounds, this gasoline engine-driven generator set is described as being equally at home as a heavy-duty power plant on a construction site or as a dependable source of standby power for a home, business, or small institution. Completely self-contained, the unit will provide full-rated ac power to run electric tools, lights and motors for contractors . . . as well as operate essential household electrical equipment during emergencies.

Both Model 205AJ-1M/1430 (standby model—see cut) and Model 205AJ-1P/1430 (contractors model) are identical in weight and size with the exception that the contractors unit is equipped with an aluminum carrying frame, making overall dimensions (approx. 24 inches long, 15½ inches wide and 19 inches high) slightly larger.

Each of these two new plants is equipped with a separate five-gallon fuel tank with rain-tight cap, which is said to provide these advantages:

(1) For construction work or other primary power applications, the generator set will operate longer on one fuel filling, with little time lost for refueling. One tank filled in the morning, is normally good for eight hours of operation.

(2) For standby use, the separate tank provides a greater measure of safety when refueling is necessary.

Both the portable and standby models described deliver the same type of ac electric power . . . either straight 115-volt, straight 230-volt or combination 115/230-volt current. Each are reported to have quick, easy manual starting with the improved Onan "Readi-Pull" recoil rope starter.

Prime mover for this new dual-purpose electric plant is the single-cylinder, four-cycle, air-cooled, Onan-built, model "AJ" engine. This power plant, according to Onan, contains stellite-faced exhaust valves, solid stellite exhaust seat inserts, oil bath air cleaner, extra large bearing surfaces . . . all designed for longer plant life and less maintenance.

The Onan-built all-climate generator, rated at 2500 watts ac, is direct-connected to the engine for positive, permanent alignment. Request NP1023.

•

EXPLOSION-PROOF PRESSURE VACUUM CONTROL—A Type J95 control has been designed for use in hazardous locations where explosive gases

or vapors are present, United Electric Controls Co. announces.

This control is an uncalibrated unit, and pressure settings are made by means of an internal adjusting nut. Models are available with a variety of

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Subsidiary of **GENERAL TELEPHONE**

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Please Print Clearly

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Street Address_____

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adjustable ranges between the limits of 0 and 500 psi, and maximum pressures of up to 600 psi.

The cast iron enclosure permits the use of this control in Class I, Groups C & D; Class II, Groups E, F & G, and Class III, as defined by the National Electrical Code. Bellows housings of phosphor bronze, brass, monel and stainless steel are available.

The company states many types of switches are available including: normally open, normally closed, or double throw with no neutral position, and are rated for 15 amps. at 115 or 230 volts ac. Other ratings are available.

All switches are single pole and suitable for 180°F ambient temperature. Request NP1024.

•

LADDER ACCESSORY—The "RES-TEP" safety step offered by Utility Tool & Body Co., was developed to provide more safety and less fatigue for anyone who works for prolonged periods on ladders, according to the company. The unit consists of a one-piece aluminum detachable ladder step having a foot rest surface measuring 5 inches x 12 inches.

The "RES-TEP" weighs 4 pounds, is described as being usable with any round rung standard ladder, and can be easily changed from one rung to another in a few seconds. Complete safety and comfort are assured on any rung regardless of tilt of the ladder. The unit can be used on double extension ladders as well as on single ladders. No adjustments are necessary at any time, the manufacturer reports, and ascent or descent is not impaired.

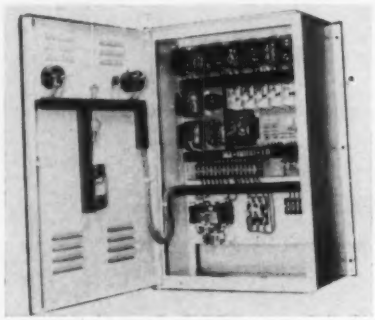
Even a big man is said to be safe and comfortable on the "RES-TEP" because the weight is distributed so that most of it is applied to the ladder uprights instead of the rungs. Deep diamond tread on the entire foot surface prevents slipping. Request NP1025.

•

GENERATOR CONTROLS—Static exciter and magnetic amplifier regulator units have been added to Kato ac generator control features.

Development work has been completed during the past three years, and the company is now producing various sizes and types of regulator and exciter systems.

The single unit static exciter-regulators replace both the conventional rotating exciters and electro-mechanical types of regulators. The assemblies are



mounted together with other necessary controls and indicators, in heavy sheet-steel wall mounted, generator base mounted, or free standing cubicles of the dead front hinged door type. Kato says heavy constructed Kato current transformers as well as best quality purchased meters, relays, and other small components are used throughout. Motor starter systems for both synchronous and induction motors are also incorporated in the control system design.

The company reports that its policy of supplying complete control systems for all Kato motors and generators permits in-plant testing of the rotating electrical machines together with the controls prior to shipment, insuring a safe dependable, thoroughly tested generating or power converting system and eliminating the problems involved in making in-the-field adjustments of make-shift controls. When generators are purchased by companies assembling them to engines, the company can supply both engine and generator control units mounted in single or separate cubicles.

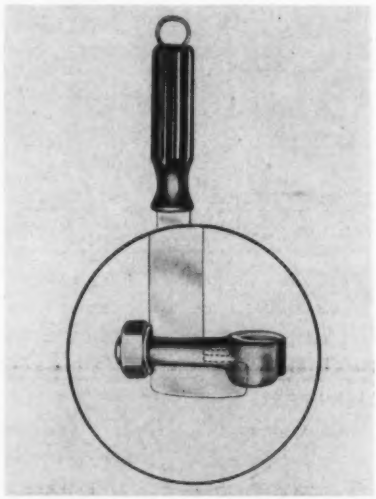
The line of Kato electrical machinery for which these control units are manufactured includes 60-cycle brushless and brush type ac revolving field generators from 5 kw to 400 kw; 60 to 400 cycle frequency changers and 400 cycle ac generators from 1 kw to 200 kw; synchronous and induction motors; variable frequency motor generator sets; dc generators; and other ac generators in many different frequencies, speeds, and voltages.

The units consist of a power magnetic amplifier, a transistorized dc amplifier, and a sensing circuit with a Zener Diode reference. It is energized from the same 60-cycle source that drives the motor of the mg set. Separate Kato magnetic amplifier type regulators are utilized when other means of generator or synchronous motor excitation is desirable. Because of the nature of "brushless" generator design, rotating exciters must be used exclusively with these machines.

The company says generator performance is better as voltage regulation is improved over other types of systems and response time and wave form is bettered. Request NP1026.

•

NEOPRENE AND POLYETHYLENE-SKINNING KNIFE—A skinning knife to cut, peel, and strip off neoprene and polyethylene coatings from wire and cable has just been announced by Miller Equipment Co., Inc. The company says the knife is designed to handle equally efficiently aluminum conductors 2/0 to 4/0 flat service wire.

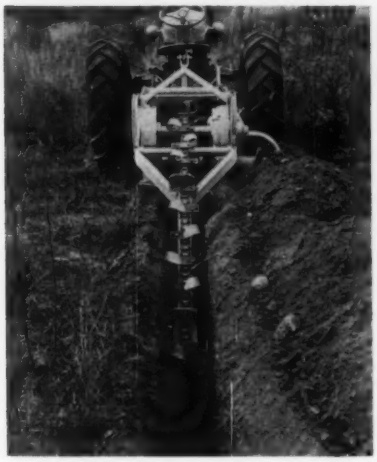


The knife is adjustable to avoid cutting and nicking the wire, and it reduces skinning time by 80 to 90 per cent, according to the company. The skinning knife works equally well for both center splices and conductor ends.

The knife blade is completely shielded to protect hands, the company states. After splitting insulation, the outside guide will slip under the insulation and peel or roll off the material with a twist of the wrist.

To be known as the No. 74 Polyknife, it can also be used as a regular skinning knife. Request NP1027.

DETACHABLE TRENCHER—Deltec, Inc., announces it has completed a trencher that is reported to overcome one of the chief drawbacks faced by the operator who can't afford to tie up his tractor with a single function.



The new product, which is going on the market under the trade name of "Laster" Trencher, can quickly be detached to free a tractor for power tilling, grading, plowing or any of the many other jobs usually accomplished with a single tractor. This does not interfere with front-mounted equipment, the company states.

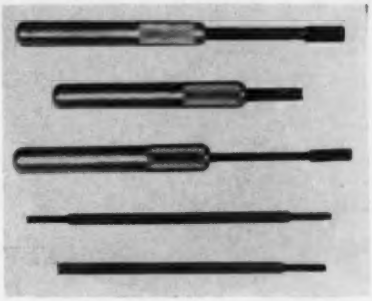
Any wheel-type tractor, with a live power take-off, ASAE standard three-point hitch, can be equipped to operate the Laster trencher, says Deltec. An "Incher" device moves the tractor forward at the correct rate of speed to allow the adjustable high carbon, abrasion-resistant steel cutters to dig from 6-inch to 14-inch wide trenches.

Moving along at speeds up to 500 feet per hour under tractor power, the machine digs a clean trench to a maximum of 4 feet in depth with standard equipment, according to the company. There is a boom extension available for deeper trenching. Soil is conveyed to the right of the cut with a screw-type earth mover. The Laster trencher weighs approximately 700 pounds. Request NP1028.

•

HAND WRAPPING TOOL—A series of "Wire-Wrap" hand tools for wrapping and unwrapping solderless wrapped connections has been introduced by Gardner-Denver Co.

The tools will provide for the maintenance and servicing of the growing number of solderless wrapped connections being used in the telephone, television and electronics industries, and can be used most ideally where a limited number of connections are to



be wrapped or unwrapped, according to the company.

The hand wrapping tools are used similarly to a screw driver. The wire is inserted in the wire slot, the tool placed on the terminal and rotated clockwise to produce a standard right-hand wrapping. Available in eight sizes with various terminal hole diameters and depths to handle wire from 26 to 14 gauge, the tools use the same wrapping bit utilized on "Wire-Wrap" tools to produce solderless wrapped connections.

A variety of "Wire-Wrap" tools for

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attracts revenue with its colorful, clean appearance ... retains profits with sturdy maintenance-free construction.

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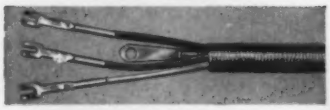

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Are you familiar with the features of these fine cords?

NEOPRENE covered cords are a highly serviceable cord, extensively used in a wide variety of services. They are moisture and grease proof . . . easy to keep clean.

NYLON covered cords are a relatively new development in telephone cords. Their fine smooth texture makes them the preferred cords for switchboard use. They give long service. Preferred by operators because of their fast, easy handling.

COTTON cords are in standard use everywhere. Their fine woven wrap makes them very serviceable for all around purposes.

Take your choice—Neoprene, Nylon or Cotton. They're all high quality cords made in accordance with Runzel high standard of quality. We carry a large stock of cords for every purpose.

Our geographical location means QUICK SERVICE.

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Cord and Wire Co.
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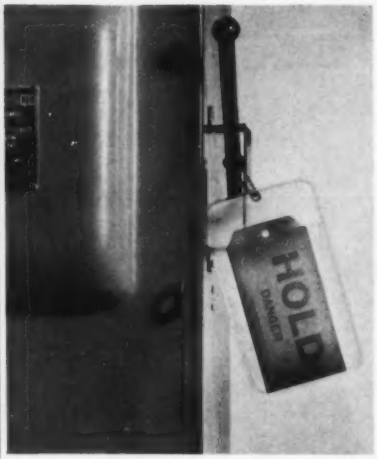
various operations has been developed by Gardner-Denver.

The unwrapping tools also are used similarly to a screw driver. The tool is placed over the terminal, snugly against the connection and rotated counter-clockwise, picking up the wire and removing it from the terminal. The wire remains on the tool for what the company describes as easy removal in hard-to-reach places.

Three unwrapping tools are offered to handle wires from 26 to 18 gauge on terminals of various size and length. They are available for unwrapping either standard right-hand wrapped connections or can be ordered to handle left-hand wrapped connections produced by the 14E-1 Two-Spindle Keller "Wire-Wrap" machine. Request NP1029.

•

PLASTIC TAG PROTECTOR—Bedford Products, Inc., says that with its new plastic protector, ordinary paper tags may now be used where more costly metal tags had previously been required.



The clear plastic tag protector protects the paper tag from the weather when used outside on transformers, terminals, disconnect switches, etc. Also, it can be used inside on tags on switches, machinery, parts bins, and material returned to storerooms, which otherwise would become soiled easily. The paper tag remains legible indefinitely.

Initial cost is said to be low and the plastic tag protector may be used over again many times. It is available in three sizes, which enable the user to purchase a suitable size for any standard-size paper tag he is already using. Request NP1030.

•

TRAFFIC CONES—A line of Traffi-cones, adapters and accessories made of polyvinyl chloride (plastic) has been developed by the originator of rubber Trafficones, Interstate Rubber Products Corp.

These new plastic cones are available in three standard sizes—12-inch, 18-inch and 28-inch.

They are constructed of tough, flexible plastic to withstand rough wear, the company states, and they have been engineered to resist greater wind velocities.

Pigment is impregnated throughout the compound producing what Interstate Rubber describes as brilliant red

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seven styles available

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and yellow colors for better visibility. The fast colors will remain bright and effective for years. No painting or maintenance is required, says the company. Request NP1031.

Ansonia Promotes Three Men, All to Function in Sales

Effective Feb. 1, according to announcement by Frederick Kenner, president of Ansonia Wire & Cable Co., three executives will assume new sales responsibilities.

T. E. THOMPSON

Tilden E. Thompson, who becomes vice president in charge of telephone and government sales, was formerly Ansonia's regional sales supervisor for the West Coast. He will work out of the Ansonia plant and offices at Ashton, R. I.

JOHN MARSH

John Marsh is the new vice president is charge of industrial sales. He was formerly Ansonia's market specialist for the power utility industry.

In his new capacity, Mr. Marsh also

GENERAL MACHINE PRODUCTS COMPANY, INC.
Old Lincoln Highway at Pa. Turnpike, Trevose, Pa.

Aerial Tents
Cable Benders
Cable Blocks
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R S Power Reel
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COMBINATION DUCT SYSTEM HAS SEPARATE COVERS

Tele-Power Duct Systems have separate covers for these two important reasons: 1. The telephone installer or electrical contractor needs to install or remove only the cover for the wiring that concerns him. 2. The high and low potential wiring cannot be exposed to each other.

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• SAFER
• LONGER LIFE
• LIGHT WEIGHT
R. G. HALEY
and Company, Inc.
SPITZER BLDG., TOLEDO 4, OHIO

F. E. CORCORAN

will be based at the company's headquarters offices.

Frederick E. Corcoran becomes assistant secretary and assistant treasurer of Ansonia.

Mr. Corcoran will continue as Ansonia's office manager in charge of sales.

Automatic Electric Sales Opens Minneapolis Office

Automatic Electric Sales Corp. has announced the opening of a new district office at Minneapolis, Minn.

WAYNE LEONARD

The new headquarters, designed to improve customer service in the north central states, will direct sales activities in Minnesota, the Michigan Peninsula, the Dakotas, Wisconsin, Iowa, and Nebraska.

Wayne Leonard, former Automatic Electric sales representative in Seattle, Wash., has been named manager of the north central district office. He will be aided by a sales and engineering staff.

Mr. Leonard has been with Automatic Electric Sales since 1945. He started as warehouse manager in Los Angeles and after two years became salesman for the southern California area. In 1950, he was recalled by the U. S. Navy for fleet duty in the Korean conflict. On his return from service in 1952, he was assigned to the Seattle post.

Milton Staub Is Elected President of Gustav Hirsch

Milton Staub, vice president and general manager of the Gustav Hirsch Organization, has been elected president of the electrical and communications firm, filling the vacancy created by the recent death of founder and president Gustav Hirsch (TELEPHONY, Jan. 31).

MILTON STAUB

Mr. Staub, who came to the United States from his native Hungary when he was nine years old, retains the post of general manager, which he has held since 1941.

Stockholders at the annual meeting at Columbus, O. headquarters also elected Miss Irene Hirsch, daughter of the founder, chairman of the board and secretary. Other officers elected are Jere S. Cave, chief engineer of the communications division, vice president; and J. F. Edmonson, chief auditor, treasurer.

Re-elected assistant secretaries are C. L. Parker, general superintendent; Elenora Hunter, private secretary; and Magdalene Greenwood, estimating division. John H. Van Bommel, European project manager, becomes an assistant secretary.

Mr. Staub joined Gustav Hirsch in 1929 after previous service with Goodyear Tire & Rubber Co. in Akron and United Woolen in Columbus. He attended Akron and Ohio State universities.

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Low Cost • Pays for Itself!

The economic Arps Model M-A Trench-Devil will handle most of your trenching jobs faster, easier and at lowest cost per foot of trench. For the largest percentage of ditching work — foundations, water services, underground wiring, gas lines, sprinkler systems — this heavy duty, one-man outfit will out-dig larger units costing many times its low price. Get more information *now* on this and other famous Arps Trenchers for larger and smaller jobs. The Arps Corporation, New Holstein, Wis. Dept. T.

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By W. R. SPRIEGEL, EDWARD SCHULZ, and W. B. SPRIEGEL. This brand-new edition of a famous work in industrial management covers all the important recent developments in the field. Outdated topics have been condensed or eliminated, and the best practice of modern supervision has been incorporated. Seven new chapters have been added. One is a unique treatment of the question of the supervisor's part in promoting mental health. Some of the other chapters cover the supervisor's role in motion and time study, interviewing, and materials control. Other additions to the second edition include an appendix on statistical quality control and many new illustrations. *1957. 349 pages. $6.00.*

An INTRODUCTION to SEMICONDUCTORS

By W. CRAWFORD DUNLAP, Jr. Offers a survey of *all* the important aspects of semiconductors—from research to devices. Covers fundamental concepts, properties of materials, methods of measurement, and applications from a unified point of view. The treatment is almost entirely physical, the emphasis being on mechanisms and devices. It gives full coverage of germanium and silicon and discusses the properties of many other semiconducting elements and compounds. *1957. 417 pages. $11.75.*

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Made of Soft Pliable Vinyl Foam

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EXTRA Holding Power
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For new construction and maintenance — Everstick Anchors speed up work and provide dependable anchorage on all types of jobs. Made of resiliant, rust resistant malleable iron. The toughest anchors made. Write for bulletin.

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Kebby New Chief Engineer Of Lenkurt Division

Maurice H. Kebby has been named chief engineer of the commercial products division of Lenkurt Electric Co.

He will direct component and systems development and quality control of Lenkurt telecommunications systems for telephone companies, railroads, other utilities and government agencies using commercial equipment. The commercial products division is located at Lenkurt's San Carlos, Cal. headquarters.

M. H. KEBBY

Having joined Lenkurt in 1951 as a filter design engineer, Mr. Kebby was promoted to senior project engineer in 1952. Subsequently he became manager of the radio and carrier development departments and of the former development engineering division. In 1957 he was named product development manager.

His experience also includes electronic development during six years of active duty as a naval reserve officer, and three years in development work with the Mackay Radio & Telegraph Co.

Mr. Kebby has the B.S.E.E. degree from Stanford University. He is a member of the Institute of Radio Engineers and of the American Management Association, and is an associate member of the American Institute of Electrical Engineers.

A. B. Chance Appoints Argo Western Vice President

The promotion of Dwight E. Argo to regional vice president of the A. B. Chance Co. has been announced by F. Gano Chance, the company's president and chairman of the board.

In his new position, Mr. Argo will be in charge of all company operations in eight western states including the A. B. Chance Co.'s manufacturing plant and sales Servi-Center in San Francisco.

D. E. ARGO

As executive in charge of Pacific Coast operations, Mr. Argo will succeed J. T. Isbell who retired from the A. B. Chance Co. on Dec. 31, after 31 years of sales and management service.

Mr. Argo joined the Chance Co. in 1941 as a salesman. He advanced to senior salesman, to district sales manager and, in 1954, was promoted to southwest regional manager. In October, 1957, he was appointed western regional manager and transferred to San Francisco where he will continue to maintain his office.

U.S.I. Chemicals Sets Up Pacific Coast Office

Establishment of a San Francisco sales office, has been announced by Alden R. Ludlow, sales vice president of U. S. Industrial Chemicals Co., division of National Distillers & Chemical Corp.

Kenneth Fietz, who will be San Francisco manager, has been a representative of the firm's New York sales division for the past 16 years. He will report to Robert E. Alexander, Pacific Coast division manager at Los Angeles.

The new sales office will handle needs of customers in central and northern California, in Oregon and Washington.

The address of the new office is: 220 Montgomery St., San Francisco 4, Cal.

Included among U.S.I. products is Petrothene® polyethylene which is used in line wire covering, and communication cable insulation and sheaths.

The San Francisco office will be tied into U.S.I.'s automated communications system through Pacific Coast headquarters in Los Angeles.

CEC Appoints R. L. Bentley To Manage Dallas Office

Appointment of Ronald L. Bentley as manager of the Dallas district office of Consolidated Electrodynamics Corp.

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International Paper Co., Wood Preserving Division, Sales—926 Grand Avenue, Kansas City, Mo.—Pressure-treated Southern Pine and Douglas Fir Poles. Creosote and Penta preservatives.

Montana Pole & Treating Plant—Box 2004, Butte, Montana. Penta-Pressure treated Lodgepole Pine and Western Larch Poles. Inquiries invited.

Piedmont Wood Preserving Company —Creosoted and Creosote-Penta Treated Pine Poles. Plant, Augusta, Georgia. Yards, Virginia, West Virginia and Connecticut. Address inquiries to Box 1662, Spartanburg, S. C.

Texas Creosoting Company—512 Main Street, Orange, Texas—Creosoted Southern Yellow Pine and Douglas Fir Poles. Can also treat with "Penta."

was announced on Jan. 15, by Charles C. Snider, director of sales.

Mr. Bentley succeeds Robert D. Enochs, recently named CEC marketing manager of analytical and control instruments.

During the past year, Mr. Bentley has been regional systems engineer for the company in the Southwest. He joined Consolidated in 1955 as an application engineer and become supervisor of a technical services group specializing in magnetic-tape instrumentation in 1957. Previously, he was a flight-test engineer with North American Aviation, a research analyst with Northrop Aircraft Corp., and a radar technician with Boeing Airplane Co.

Bentley has a B.S. degree in electrical engineering from the University of Washington and is a member of the Instrument Society of America.

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MANAGER FOR RURAL DIAL TELEPHONE SYSTEM, located in Hamilton County, Illinois. Administrative ability to achieve and maintain efficient operations. Technical, plant and commercial knowledge and experience desired. Write—Francis W. Kittinger, Coordinator, Hamilton County Telephone Co-op., McLeansboro, Ill.

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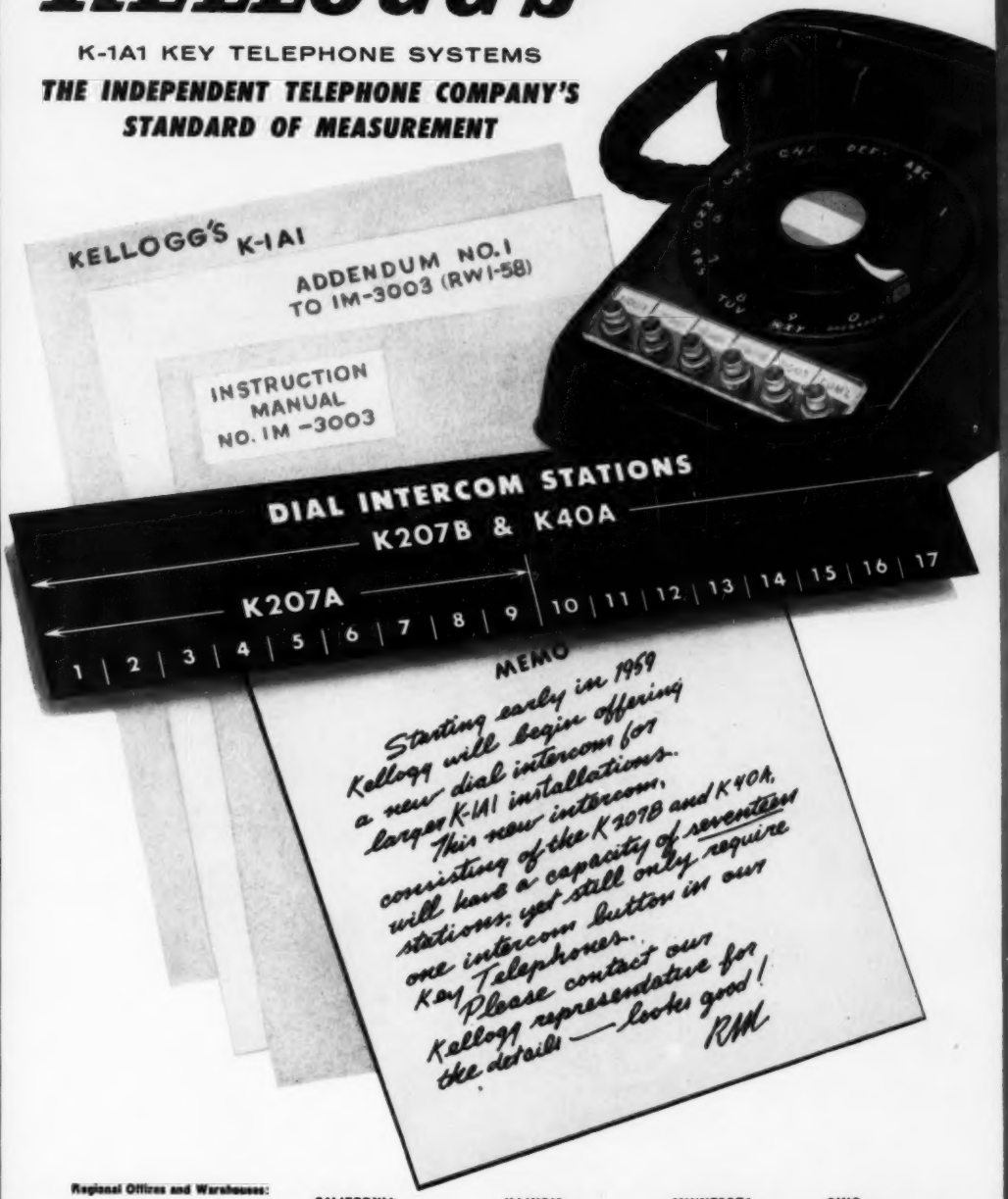
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